VOL XLII.—PART IX.

SECOND SESSION

OF THE

TWELFTH LEGISLATU

OF THE

PROVINCE OF ONTARIO.

SESSION 1910.

1409
11/1

Printed by
WILLIAM BRIGGS,
29-37 Richmond Street West,
TORONTO

LIST OF SESSIONAL PAPERS

PRESENTED TO THE HOUSE DURING THE SESSION.

TITLE.	NO.	REMARKS.
Accounts, Public, for ten months	1	*Printed.*
Agricultural College, Report	29	"
Agricultural and Experimental Union, Report	31	"
Agricultural Societies, Report	43	"
Agriculture, Department of, Report	28	"
Archives, Report	51	"
Auditor, Statement of	57	"
Bee-Keepers, Report	37	*Printed.*
Binding and Printing, Contract	53	"
Binding, Contract	54	"
Births, Marriages and Deaths, Report	19	"
Blind Institute, Report—part of	16	"
Canadian Northern Railway in Clay Belt of Northern Ontario	73	*Not Printed.*
Children Neglected and Dependent, Report	26	*Printed.*
Colonization, Report of Bureau	74	"
Colonization Roads, amount paid for inspection	70	*Not Printed.*
Corn Growers', Report	35	*Printed.*
Dairymen's Association, Report	38	*Printed.*
Division Courts' Inspection, Report	5	"
Drainage, Money Loaned for	71	*Not Printed.*
Education, Report	16	*Printed.*
Education, Orders in Council	56	*Not Printed.*
Education, County Model School Certificates Granted to Teachers	67	"
Education, Permits and Extensions Granted	72	"
Elections, Return from Records	50	*Printed.*
Emigrants brought by Salvation Army	78	*Not Printed.*
Entomological Society, Report	36	*Printed.*
Estimates, 1910-1911	2	"
Factories, Report	46	*Printed.*
Farmers' Institutes, Report	40	"
Feeble-Minded, Report on the	23	"
Fiat, Cases where necessary	77	*Not Printed.*
Fishermen, Licenses Granted to, in Lake Huron and elsewhere	62	"
Fisheries and Game, Report	13	*Printed.*
Fruit Branch, Report	33	"
Fruit Growers', Report	32	"
Game and Fish, Report	13	*Printed.*
Gaols and Prisons, Report	25	"
Gillies' Limit, Area of, etc.	48	*Not Printed.*

Title.	No.	Remarks.
Hand, Game Warden, Resignation of, etc.	76	*Not Printed.*
Health, Report	20	*Printed.*
Highway Improvement, Report	14	"
Horticultural Societies', Report	44	"
Hospitals and Charities', Report	24	"
Hospitals for Idiots and Epileptics, Report	22	"
Hospitals for Insane, Report	21	"
Hydro-Electric Power Commission, Award of Arbitrators *re* Easements	69	*Not Printed.*
Idiots and Epileptics, Hospital, Report	22	*Printed.*
Industries, Report	45	"
Infant Mortality, Report on	66	"
Insane, Hospitals for, Report	21	"
Insurance, Report	10	"
Insurance, Permits to Effect, in Foreign Unregistered Corporations.	58	*Not Printed.*
Labour, Report	15	*Printed.*
Lands, Forests and Mines, Report	3	"
Land Titles Act, Orders in Council	59	*Not Printed.*
Legal Offices Inspection, Report	6	*Printed.*
Library, Report on State of	52	"
Liquor License Act, Operation of, Report	27	"
Live Stock Associations, Report	39	"
Loan Corporations, Report	11	"
Milk Commission, Report	55	*Printed.*
Mines, Bureau of, Report	4	"
Ontario, Situation, Size, Climate, etc.	60	*Printed for distribution only.*
Ontario Railway and Municipal Board, Report	49	*Printed.*
Ontario Readers, Tenders for Printing	65	*Not Printed.*
Ontario Veterinary College, Report	30	*Printed.*
Parliament Buildings, Reports *re* Fire at	68	*Not Printed.*
Poultry Institute, Report	42	*Printed.*
Printing and Binding Contracts	53	"
	54	"
Prisons and Gaols, Report	25	"
Provincial Municipal Auditor, Report	8	"
Public Accounts, ten months	1	"
Public Works, Report	12	"
Queen Victoria Niagara Falls Park, Report	9	*Printed.*
Railway and Municipal Board, Report	49	*Printed.*
Registrar-General, Report	19	"
Registry Offices, Inspection, Report	7	"
Secretary and Registrar, Report	18	*Printed.*
Statutes Commission, Composition of, etc.	75	*Not Printed.*
Statutes, Distribution of	64	"

Title.	No.	Remarks.
Succession Duty Act, Rules and Regulations	63	*Printed for distribution only.*
Surrogate Court, Orders in Council	59	*Not Printed.*
Surrogate Court, Orders in Council	61	"
Temiskaming and N. O. R. Commission, Report	47	*Printed.*
Teachers' Certificates	67	*Not Printed.*
Teachers' Permits and Extensions	72	"
Toronto University, Report	17	*Printed.*
Vegetable Growers' Association, Report	34	*Printed.*
Veterinary College, Report	30	"
Women's Institutes, Report	44	*Printed.*

LIST OF SESSIONAL PAPERS

Arranged in numerical Order with their Titles at full length; the dates when Ordered and when presented to the Legislature; the name of the Member who moved the same, and whether Ordered to be Printed or not.

CONTENTS OF PART I.

No. 1..... Public Accounts of the Province, for the ten months ending 31st October, 1909. Presented to the Legislature, 27th January, 1910. *Printed.*

No. 2.... Estimates for the service of the Province until the Estimates of the year are finally passed. Presented to the Legislature, 28th January, 1909. *Not Printed.* Supplementary Estimates for the year 1909-10. Presented to the Legislature, 1st and 28th February, 1910. *Printed.* Estimates for the year ending 31st October, 1911. Presented to the Legislature, 7th March, 1910. *Printed.*

CONTENTS OF PART II.

No. 3..... Report of the Minister of Lands, Forests and Mines of the Province for the year 1909. Presented to the Legislature, 14th March, 1910. *Printed.*

No. 4..... Report of the Bureau of Mines, for the year 1909. Presented to the Legislature, 10th March, 1910. *Printed.*

No. 5..... Report of the Inspector of Division Courts, for the year 1909. Presented to the Legislature, 8th February, 1910. *Printed.*

No. 6..... Report of the Inspector of Legal Offices, for the year 1909. Presented to the Legislature, 8th March, 1910. *Printed.*

No. 7..... Report of the Inspector of Registry Offices, for the year 1909. Presented to the Legislature, 8th March, 1910. *Printed.*

No. 8..... Report of the Provincial Municipal Auditor, for the year 1909. Presented to the Legislature, 14th March, 1910. *Printed.*

No. 9.... Report of the Commissioners for the Queen Victoria Niagara Falls Park, for the year 1909. Presented to the Legislature, 4th March, 1910. *Printed.*

CONTENTS OF PART III.

No. 10.... Report of the Inspector of Insurance and Registrar of Friendly Societies for the year 1909. Presented to the Legislature, 18th February, 1910. *Printed.*

No. 11.... Financial Statements made by Loan Corporations, Building Societies, Loaning Land Companies and Trust Companies, for the year 1909. Presented to the Legislature, 18th February, 1910. *Printed.*

CONTENTS OF PART IV.

No. 12.... Report of the Minister of Public Works, for the year 1909. Presented to the Legislature, 14th February, 1910. *Printed.*

No. 13.... Report of the Game and Fisheries Department, for the year 1909. Presented to the Legislature, 18th February, 1910. *Printed.*

No. 14.... Report on Highway Improvement in Ontario, for the year 1909. Presented to the Legislature, 14th February, 1910. *Printed.*

No. 15.... Report of the Bureau of Labour of Ontario, for the year 1909. Presented to the Legislature, 14th March, 1910. *Printed.*

CONTENTS OF PART V.

No. 16.... Report of the Minister of Education, for the year 1909. Presented to the Legislature, 21st February, 1910. *Printed.*

No. 17.... Report of the Board of Governors of the University of Toronto, for the year ending 30th June, 1909. Presented to the Legislature, 27th January, 1910. *Printed.*

CONTENTS OF PART VI.

No. 18.... Report of the Secretary and Registrar of Ontario, for the year 1909. Presented to the Legislature, 4th March, 1910. *Printed.*

No. 19.... Report of the Registrar-General, relating to the Registration of Births, Marriages and Deaths, for the year 1908. Presented to the Legislature, 21st February, 1910. *Printed.*

No. 20.... Report of the Provincial Board of Health, for the year 1909. Presented to the Legislature, 21st February, 1910. *Printed.*

No. 21.... Report upon the Hospitals for the Insane of Ontario, for the year ending 30th September, 1909. Presented to the Legislature, 8th March, 1910. *Printed.*

No. 22.... Report upon the Hospital for Idiots and Epileptics, for the year 1909. Presented to the Legislature, 8th March, 1910. *Printed.*

No. 23.... Report upon the Feeble-Minded in Ontario, for the year 1909. Presented to the Legislature, 9th March, 1910. *Printed.*

No. 24.... Report upon the Hospitals and Charities of Ontario, for the year ending 30th September, 1909. Presented to the Legislature, 8th March, 1910. *Printed.*

No. 25.... Report upon the Common Gaols, Prisons, and Reformatories of Ontario, for the year ending 30th September, 1909. Presented to the Legislature, 14th March, 1910. *Printed.*

CONTENTS OF PART VII.

No. 26.... Report on Neglected and Dependent Children in Ontario, for the year 1909. Presented to the Legislature, 8th March, 1910. *Printed.*

No. 27.... Report upon the Operation of the Liquor License Acts in Ontario, for the year 1909. Presented to the Legislature, 10th March, 1910. *Printed.*

No. 28.... Report of the Department of Agriculture, for the year 1909. Presented to the Legislature, 14th March, 1910. *Printed.*

No. 29.... Report of the Ontario Agricultural College and Experimental Farm, for the year 1909. Presented to the Legislature, 10th March, 1910. *Printed.*

No. 30.... Report of the Ontario Veterinary College, for the year 1909. Presented to the Legislature, 10th March, 1910. *Printed.*

No. 31.... Report of the Ontario Agricultural and Experimental Union, for the year 1909. Presented to the Legislature, 10th March, 1910. *Printed.*

CONTENTS OF PART VIII.

No. 32.... Report of the Fruit Growers' Association of Ontario, for the year 1909. Presented to the Legislature, 10th March, 1910. *Printed.*

No. 33.... Report of the Fruit Branch of the Department of Agriculture, for the year 1909. Presented to the Legislature, 10th March, 1910. *Printed.*

No. 34.... Report of the Ontario Vegetable Growers' Association, for the year 1909. Presented to the Legislature, 10th March, 1910. *Printed.*

No. 35.... Report of the Ontario Corn Growers for the year 1909. Presented to the Legislature, 10th March, 1910. *Printed.*

No. 36.... Report of the Entomological Society of Ontario, for the year 1909. Presented to the Legislature, 10th March, 1910. *Printed.*

No. 37.... Report of the Ontario Bee-Keepers' Association, for the year 1909. Presented to the Legislature, 10th March, 1910. *Printed.*

No. 38.... Report of the Dairymen's Associations of Ontario, for the year 1909. Presented to the Legislature, 10th March, 1910. *Printed.*

CONTENTS OF PART IX.

No. 39.... Report of the Live Stock Associations of Ontario, for the year 1909. Presented to the Legislature, 4th February, 1910. *Printed.*

No. 40.... Report of the Farmers' Institutes of Ontario, for the year 1909. Presented to the Legislature, 4th February, 1910. *Printed.*

No. 41.... Report of the Women's Institutes of Ontario, for the year 1909. Presented to the Legislature, 4th February, 1910. *Printed.*

No. 42.... Report of the Poultry Institute of the Province of Ontario, for the year 1909. Presented to the Legislature, 4th February, 1910. *Printed.*

No. 43.... Report of the Agricultural Societies of Ontario, for the year 1909. Presented to the Legislature, 4th February, 1910. *Printed.*

CONTENTS OF PART X.

No. 44.... Report of the Horticultural Societies of Ontario, for the year 1909. Presented to the Legislature, 10th March, 1910. *Printed.*

No. 45.... Report of the Bureau of Industries of Ontario, for the year 1909. Presented to the Legislature, 10th March, 1910. *Printed.*

No. 46.... Report of the Inspectors of Factories of Ontario, for the year 1909. Presented to the Legislature, 10th March, 1910. *Printed.*

No. 47.... Report of the Temiskaming and Northern Ontario Railway Commission, for the year 1909. Presented to the Legislature, 27th January, 1910. *Printed.*

CONTENTS OF PART XI.

No. 48.... Return to an Order of the House of the Twenty-first day of February, 1910, for a Return shewing: (*a*) What is the area of the Gillies Limit. (*b*) How much of the area has been reported to the Government to be mineralized. (*c*) How much of the area has been prospected. (*d*) How much of the area has been sold. (*e*) What are the dates of the respective sales, the amount sold in each case, the names of the purchasers and the prices obtained in each case. Presented to the Legislature, 9th March, 1910. Mr. *McDougal*. *Not Printed.*

No. 49.... Report of the Ontario Railway and Municipal Board, for the year 1909. Presented to the Legislature, 1st February, 1910. *Printed.*

No. 50.... A Return from the Records of the General and Subsequent Elections to the Legislative Assembly on the 8th day of June, 1908, shewing:—(1) The number of Votes Polled for each Candidate in each Electoral District in which there was a contest; (2) The majority whereby each successful Candidate was returned; (3) The total number of Votes Polled; (4) The number of Votes remaining unpolled; (5) The number of names on the Polling Lists; (6) The number of Ballot Papers sent out to each Polling Place; (7) The Used Ballot Papers; (8) The Unused Ballot Papers; (9) The Rejected Ballot Papers; (10) The Cancelled Ballot Papers; (11) The Declined Ballot Papers; (12) The Ballot Papers taken from Polling Places; (13) A General Summary of Votes cast in each Electoral District; (14) A similar statement as to any Elections held since the General Election. Presented to the Legislature, 26th January, 1910. *Printed.*

No. 51.... Report upon the Archives of the Province, for the year 1909. Presented to the Legislature, 8th March, 1910. *Printed.*

No. 52.... Report of the Librarian on the state of the Library. Presented to the Legislature, 27th January, 1910. *Printed.*

No. 53.... Agreement and Contract with William Briggs, D.D., Book Steward of the Methodist Church, in connection with the Printing and Binding for the Legislative Assembly of Ontario. Presented to the Legislature, 26th January, 1910. *Printed.*

No. 54.... Agreement and Contract with E. H. Harcourt Company, Limited, in connection with the Binding, etc., for the Legislative Assembly of Ontario. Presented to the Legislature, 26th January, 1910. *Printed.*

No. 55.... Report of the Milk Commission appointed to enquire into the production, care and distribution of Milk. Presented to the Legislature, 21st February, 1910. *Printed*

No. 56.... Copies of Regulations and Orders in Council in the matter of Education, made pursuant to the provisions of 6 Edward VII., Cap. 52, Section 27, since the last Session of the Legislature. Presented to the Legislature, 27th January, 1910. *Not printed.*

No. 57.... Statement of the Auditor made pursuant to the provisions of Section 13, Sub-section 2, of the Audit Act as amended by Section 6, Chapter 10, 9 Edward VII. Presented to the Legislature, 27th January, 1910. *Printed.*

No. 58.... Return to an Order of the House of the Thirtieth day of March, 1909, for a Return shewing, during the past twelve months all permits to effect insurance in foreign unregistered Corporations, Insurers or Underwriters issued by the Insurance Registrar, under Section 86a of the Ontario Insurance Act, as amended by 2 Edward VII., Cap. 12, and 4 Edward VII., Cap. 15, and of all letters and applications in respect of which such permits were issued. Presented to the Legislature, 27th January, 1910. Mr. *Proudfoot. Not printed.*

No. 59.... Copies of Orders in Council in accordance with the provisions of Subsection 2 of Section 84 of the Surrogate Courts Acts, and Subsection 4 of Section 164 of the Land Titles Act. Presented to the Legislature, 3rd February, 1910. *Not printed.*

No. 60.... The Province of Ontario, Situation and Size, Climate, Products, Resources, Progress and Advantages. Presented to the Legislature, 4th February, 1910. *Printed for distribution only.*

No. 61.... Copy of an Order in Council under Sub-section 2 of Section 84 of the Surrogate Courts Act, authorizing payment of surplus surrogate fees to His Honour Judge Wismer, Junior Judge of the County Court of the County of Simcoe. Presented to the Legislature, 7th February, 1910. *Not printed.*

No. 62.... Return to an Order of the House of the Twenty-eighth day of January, 1910, for a Return: 1. Shewing the number of Licenses Granted to Fishermen in each of the following Districts in the years 1908 and 1909; (*a*) Lake Superior. (*b*) The Northern Channel of Lake Huron. (*c*) Georgian Bay. (*d*) Lake Huron and Lake St. Clair. (*e*) Lake Erie and Grand River. (*f*) Rivers St. Clair, Thames

and Detroit, and (*g*) Lake Ontario and Bay of Quinte. 2. The kind of License Granted to each Fisherman. 3. The cost of Licenses to each Fisherman of each of the above Districts. Presented to the Legislature, 7th February, 1910. Mr. *Proudfoot*. *Not printed.*

No. 63.... Rules and Regulations made by order of His Honour the Lieutenant-Governor in Council, for the carrying into effect the Succession Duty Act. Presented to the Legislature, 14th February, 1910. *Printed for distribution only.*

No. 64.. Statement on the distribution of the Revised and Sessional Statutes, up to 31st December, 1909. Presented to the Legislature, 14th February, 1910. *Not printed.*

No. 65.... Return of an Order of the House of the Seventh day of February, 1910, for a Return shewing: 1. A copy of the advertisement calling for tenders for the printing, publishing and supply of "Ontario Readers"; 2. Copies of all tenders received; 3. Copies of correspondence between the Government of Ontario or any official thereof and any tenderer or tenderers; 4. A copy of the contract entered into on behalf of the Government for the printing, publishing and supplying of "Ontario Readers"; 5. A detailed statement of the cost to the Government of supplying to the publisher electro-plates for each reader. Presented to the Legislature, 28th February, 1910. Mr. *MacKay (Grey)*. *Not printed.*

No. 66.... Report upon Infant Mortality in the Province. Presented to the Legislature, 8th March, 1910. *Printed.*

No. 67.... Return to an Order of the House of the Sixteenth day of February, 1910, for a Return shewing: 1. The number of male teachers granted County Model School Certificates in the years 1906, 1907, 1908 and 1909, respectively. 2. The number of female teachers granted County Model School Certificates in the years 1906, 1907, 1908 and 1909, respectively. 3. The number of male teachers granted Normal School Certificates in the years 1906, 1907, 1908 and 1909, respectively. 4. The number of female teachers granted Normal School Certificates in the years 1906, 1907, 1908 and 1909, respectively. Presented to the Legislature, 8th March, 1910. Mr. *MacKay (Grey)*. *Not printed.*

No. 68.... Return of an Order of the House of the Fourth day of March, 1910, for a Return of Copies of the Reports relating to the cause of the fire in the Parliament Buildings. Presented to the Legislature, 9th March, 1910. Mr. *Elliott*. *Not printed.*

No. 69.... Return to an Order of the House, of the Twenty-second February, 1910, for a Return shewing: All awards by any Arbitrator or Board of Arbitration, to settle disputes between the Hydro-Electric Power Commission and those over whose lands the Commission have taken easements. Presented to the Legislature, 10th March, 1910. Mr. *Reed (Wentworth.)* *Not printed.*

No. 70.... Return to an Order of the House, of the Twenty-fifth day of February, 1910. for a Return shewing: The total amount paid for inspection

and overseeing work done on building Colonization Roads during the years 1908 and 1909. Presented to the Legislature, 10th March, 1910. Mr. *Proudfoot. Not printed.*

No. 71.... Return to an Order of the House, of the Twenty-fifth day of February, 1910, for a Return shewing: 1. The amount of Provincial Money (if any) loaned to Municipalities of the Province for Drainage purposes during each of the years 1904 to 1909, both inclusive. 2. The names of the Municipalities and the amount loaned to each in each of the said years. 3. The rate of interest charged the Municipalities, if other than four per cent. 4. The Special Grants (if any) given to Municipalities for Drainage Schemes during the said years, the names of the Municipalities to which given, and the amount given each. Presented to the Legislature, 10th March, 1910. Mr. *Stock. Not printed.*

No. 72.... Return to an Order of the House, of the Sixteenth day of February, 1910, for a Return shewing the number of permits and extensions granted to Public School Teachers during the years 1908 and 1909: 1. The reason for granting such permits and extensions. 2. How many of the teachers who received permits had previously taught. 3. The ages of the teachers who received such permits and extensions. Presented to the Legislature, 10th March, 1910. Mr. *Proudfoot. Not printed.*

No. 73.... Return to an Order of the House, of the Third day of March, 1910, for a Return shewing what steps (if any) the Canadian Northern Ontario Railway Company has taken towards the building of a section of the Railway into the clay belt of Northern Ontario in aid of which this House voted to the Company at its last Session a subsidy of four thousand acres of land for every mile of the Railway which may be constructed by the Company on certain conditions, among others that operations be commenced within one year from the date of the passing of the Act, April 13th, 1909. Presented to the Legislature, 10th March, 1910. Mr. *Johnson. Not printed.*

No. 74.... Report of the Bureau of Colonization, for the year 1909. Presented to the Legislature, 14th March, 1910. *Printed.*

No. 75.... Return to an Order of the House of the Twenty-fourth day of February, 1910, for a Return shewing: 1. The names of the gentlemen who compose the Commission for the Revision of the Statutes. 2. The total cost of the Revision to date, showing in detail, the persons to whom and on what account the money was paid. 3. When will the Statutes be completed.. 4. What steps have the Government taken to induce or insist on the Commissioners completing their work at an early date. Presented to the Legislature, 15th March, 1910. Mr. *Proudfoot. Not printed.*

No. 76.... Return to an Order of the House of the Twenty-fifth day of February, 1910, for a Return shewing: 1. When was the resignation of the late Game Warden, T. A. Hand, accepted. Was it voluntary, or was he forced to resign. 2. What moneys had been collected by the said Hand and not accounted for or returned, and if Fishermen had fished and Hunters had hunted on receipts only given by the said Hand. If so, the amount of money unaccounted for and the number

ANNUAL REPORTS

OF THE

Live Stock Associations

OF THE

PROVINCE OF ONTARIO

1909.

Dominion Cattle Breeders' Association
Dominion Sheep Breeders' Association
Dominion Swine Breeders' Association
Ontario Poultry Associations
Provincial Winter Fairs
Ontario Horse Breeders' Association and Exhibition

(PUBLISHED BY THE ONTARIO DEPARTMENT OF AGRICULTURE, TORONTO.)

PRINTED BY ORDER OF
THE LEGISLATIVE ASSEMBLY OF ONTARIO

TORONTO:
Printed and Published by L. K. CAMERON, Printer to the King's Most Excellent Majesty
1909.

WARWICK BROS' & RUTTER, Limited, Printers,
TORONTO.

To the Honourable JOHN MORISON GIBSON, K.C., LL.D., etc., etc., etc.,
Lieutenant-Governor of the Province of Ontario.

MAY IT PLEASE YOUR HONOUR:

The undersigned begs to present herewith for the consideration of His Honour the Reports of the Live Stock and Poultry Associations for 1909; also the Reports of the Provincial Winter Fairs, and of the Ontario Horse Breeders' Association.

Respectfully submitted,

JAMES S. DUFF,
Minister of Agriculture.

TORONTO, 1909.

CONTENTS.

	PAGE
DOMINION CATTLE BREEDERS' ASSOCIATION:	
Officers' Report	7
Financial Statement	10
Officers for 1909	11
DOMINION SHEEP BREEDERS' ASSOCIATION:	
Annual Meeting	13
Report of Directors	14
Financial Statement	16
Officers for 1909	17
Expert Judges for Sheep for 1909	18
DOMINION SWINE BREEDERS' ASSOCIATION:	
Directors' Report	20
Financial Statement	22
Officers for 1909	24
Expert Judges for Swine for 1909	25
WESTERN ONTARIO POULTRY ASSOCIATION:	
Annual Meeting	27
Officers for 1909	27
Financial Statement	28
Directors' Meeting	28
Judges recommended for Provincial Winter Fair	29
EASTERN ONTARIO POULTRY ASSOCIATION:	
Annual Meeting	29
Officers for 1909	30
THE PROVINCIAL WINTER FAIR:	
Public Meeting	31
Address of Welcome: J. P. DOWNEY, M.P.P	32
Address: W. H. HOYLE, M.P.P	33
Address: G. C. CREELMAN	37
Fattening Chickens and Demonstration in Trussing: MISS MARY YATES	39
When and How to Hatch: L. H. BALDWIN	44
The Pasteurizing of Whey: FRANK HERNES	45
The Feeding Value of Pasteurized Whey: W. C. SHEARER	49
Cleanliness in the Milk Supply: W. F. STEPHEN	53
How to Increase the Milk Yield: GEORGE RICE	56
Cause and Prevention of Common Ailments in Horses: J. STANDISH, V.S	63
Treatment of Common Ailments of Horses: J. HUGO REED, V.S	70
Cause, Prevention and Treatment of Milk Fever in Cattle: H. G. REED, V.S	77
Cause, Prevention and Treatment of Contagious Abortion in Cattle: H. G. REED, V.S.	82
Cause, Prevention and Treatment of Indigestion in Cattle: H. G. REED, V.S	85
Cause, Prevention and Treatment of the Common Ailments in Sheep: J. HUGO REED	88
Sheep Scab: J. HUGO REED, V.S	93
Growing and Handling Wool: T. D. WARDLAW	96
Outlook for the Swine Industry in Ontario: G. E. DAY	106
Alfalfa Growing in Ontario: C. A. ZAVITZ	109
Weeds, Their Identification and Control: GEO. H. CLARK	113
Seed Exhibits: J. BUCHANAN	116

Reports of Judges on Poultry and Poultry Exhibits at Winter Fair, 1908 : PAGE
Jas. A. Tucker ... 118
R. Oke ... 119
H. P. Schwab ... 121
Wm. McNeil ... 123
L. G. Jarvis ... 128
W. Cosh ... 130
S. Butterfield ... 132
James Anderson ... 135
Officers and Committees ... 136
Financial Statement ... 137

Eastern Ontario Live Stock and Poultry Show, 1909 :
Public Meeting ... 138
Address : Mayor Hopewell ... 139
Address : Dr. R. A. Falconer ... 140
Address : James Mills, LL.D. ... 144
Address : Hon. J. S. Duff ... 145
Address : Senator D. Derbyshire ... 147
The Pasteurization of Whey : H. H. Dean ... 148
Winter Feeding of Dairy Cows : J. H. Grisdale ... 154
Breeding and Rearing Chickens : W. R. Graham ... 159
What the Raising of more Sheep would mean to Eastern Ontario : A. W. Smith ... 160
Economical Feeding of Bacon Hogs : J. H. Grisdale ... 161
System in Horse Breeding : John Gardhouse ... 166
Feeding Horses : John Bright ... 169
How to Select a Heavy Draught Stallion : Wm. Smith ... 171
How to make Rough Feeding Stuff Most Palatable : Robert Miller ... 173
Effect of Stable Ventilation on Beef Cattle : J. H. Grisdale ... 176
Reports of Judges on Poultry ... 179
Officers and Committees, 1909-10 ... 185
Financial Statement ... 186

Ontario Horse Breeders' Association :
Report of the Executive ... 187
Financial Statement ... 189
Resolutions ... 189
Election of Directors ... 190
Exhibition at Union Stock Yards—Prize Lists ... 191

Dominion Cattle Breeders' Association.

ANNUAL MEETING.

The annual meeting of the Dominion Cattle Breeders' Association was held in the Temple Building, Toronto, February 1st, 1909. The President, JOHN GARDHOUSE, occupied the chair. On motion, the minutes of the previous meeting were taken as read.

OFFICERS' REPORT.

The Secretary read the Officers' Report as follows:—

SHIPMENTS OF PURE-BRED STOCK FROM ONTARIO TO THE WEST: There were seven Association cars of stock shipped to the West in 1908, stock being delivered to sixty-five different points in the west. The first shipment of two cars was made in March, and consisted of 11 horses, 21 cattle, 6 pigs and 1 sheep. The second shipment of two cars left in April, with 4 horses, 23 cattle and 3 hogs. The third shipment, one car, left for the west in June with 6 horses, 8 cattle and 1 sheep. The fourth shipment of two cars started in October and consisted of 1 horse, 22 cattle, 6 hogs and 12 sheep. There is now a balance to the credit of the cars account of $19.44.

The following table shows the total receipts and expenditures in connection with each of the cars:—

	Receipts.	Expenditures.
Shipment of March	$635 01	$655 05
Shipment of April	326 00	317 92
Shipment of June	241 99	259 02
Shipment of October	560 88	571 62
	$1,763 88	$1,803 61

The different breeds of stock were represented in these shipments by the following numbers:—

Breed.	Number in each shipment.				Total Number.
	March.	April.	June.	October.	
Horses:					
Clydesdales	10	2	5	1	18
Hackneys	1				1
Thoroughbreds		2	1		3
Cattle:					
Dexter Kerry				16	16
Ayrshires	6			3	9
Holsteins		11	2		13
Aberdeen-Angus	1	1			2
Shorthorns	14	11	1	2	28
Jerseys			3		3
Herefords			2		2
Galloways				1	1
Swine:					
Berkshires	1	2		6	9
Yorkshires	5	1			6
Sheep:					
Shropshires	1		1	4	6
Hampshires				7	7
Oxford Downs				1	1

In June of 1908, notice was given by the Railroad Companies of the withdrawal of the privilege of partial unloading out of cars shipped to the Western Provinces, pure-bred breeding stock consigned to different points along the direct route to the destination. This privilege had previously been allowed upon payment of a shunting charge of $2. This would materially affect the shipment of stock to the west except when sold

in car loads, and as the chief trade in pure-bred stock between Ontario and the west is made up of sales of smaller lots than car loads, these smaller lots could not be delivered except at prohibitive rates. This matter was considered to be so vital to the breeders of pure-bred stock that it was decided to have the President of this Association, together with representatives of other Associations, the Minister of Agriculture and the Dominion Live Stock Commissioner, go to Montreal to ask the Railroad Officials to reconsider the regulation. The mission, we are glad to report, was entirely successful.

Ontario Pure-Bred Stock Trade: At the last annual meeting of this Association, a suggestion was made that greater efforts should be made by this Association in conjunction with other live stock associations in Ontario, to keep more prominently before probable purchasers in the west, the quality and quantity of pure-bred stock of the different breeds, bred and for sale in this Province. During the past few years a large amount of land has been taken up in the West by persons who are not familiar with conditions in this country, know nothing of Ontario and her pure-bred stock, or consider it too far away to do any business. Ontario is a long distance from the western market, and there are therefore natural conditions to be overcome.

What will first require to be done is to impress western buyers with facts as to the condition of pure-bred stock in the Province of Ontario; second, to provide some means by which persons in the west, who have no personal knowledge of the reputation of Ontario breeders, may be assured of procuring value for money expended; third, to make them thoroughly familiar with the easy and cheap method of transportation by means of the Association cars.

In order that these three things may be accomplished, there would first require to be appointed a representative or representatives in the west, whose business it would be to make western farmers and stockmen more familiar with Ontario conditions; some one who would be present at fairs and exhibitions, visit different districts and keep closely in touch with live stock conditions there, and who would also book orders. There should be advertisements in the prominent agricultural papers in the West, and possibly some of the larger local papers which the representative could arrange for. He would also be in a position to make suggestions as to the best plan to adopt to reach the buyers so as to make the work satisfactory to both buyer and seller. He would also be familiar with the rates and dates of shipment of the Association cars of pure-bred stock, and these should be thoroughly advertised in the West.

One thing will require to be done if this Western trade is to be put on a more satisfactory basis, and that is the cars should be shipped at stated intervals. This would mean however, that sometimes a car would be shipped without a full car load of stock, and the deficit would require to be made up directly out of the funds of the associations. The advantage to the buyer, the seller and the general trade would easily warrant the expenditure.

In Ontario it would be necessary to keep closely in touch with the breeders having stock for sale, the quantity, prices, age, etc. One of the most difficult and at the same time, the most important matters, as the success of the whole matter will depend upon it, is the selection of the stock. This should be done by appointed inspectors, persons in whom everyone would have confidence, located at different points in the Province, so that the travelling expenses would be kept as low as possible.

It is suggested that this work should be organized and arranged by a joint committee, consisting of the executives of the various associations interested, who should be given power to take such action regarding the matter as they may decide upon.

The Ontario Provincial Winter Fair.

Beef cattle.	No. of animals, 1907.	No. of animals, 1908.	Prizes offered, not including specials, 1908.	Special prizes offered, 1908.
Shorthorns	23	24	$ 196	$ 175
Hereford or Aberdeen Angus	13	11	150	132(%)
Galloways or Devons	5	7	150	30
Grades or crosses	22	48	355(x)	370
Export steers	12	3	100	
Dressed carcasses			200	
Grand championship			25	
	75	93	1,176	707

(x) Includes special prizes for amateurs paid out of general funds.

(%) Includes $50 offered for champion if won by an animal sired by a pure-bred Aberdeen Angus bull.

The above table shows an increase in the number of entries for 1908, in the Beef Cattle Department, but the entries are not as large as they should be. For the last Show there were $330 offered to amateur exhibitors in addition to several counties offering prizes for amateur exhibitors residing in the county. A number of new exhibitors were encouraged to exhibit on account of these prizes.

Dairy cattle.	No. of animals, 1907.	No. of animals, 1908.	Prizes offered, not including specials.	Special prizes offered.
Shorthorns	7	6	$135 00	$150 00
Ayrshires	14	11	135 50	53 50(x)
Holsteins	12	14	135 00	145 00(x)
Jerseys	.....	3	135 00	.....
Guernseys	.....	.....	135 00	.....
Grades	2	1	135 00	.....
	35	35	$810 50	$348 50

(x) Do not include conditional prizes offered by the Ayrshire and Holstein Associations.

EASTERN ONTARIO LIVE STOCK AND POULTRY SHOW.

The following statement shows the number of entries made in the Beef Cattle and Dairy Cattle Departments at the Eastern Ontario Live Stock and Poultry Show at Ottawa, 1909; also the prizes offered in the different classes and the prizes paid:—

Beef cattle.	No. of entries.	Prizes offered.	Prizes paid.
Shorthorns	35	$ 315 00	$ 310 00
Herefords and Aberdeen Angus	.....	100 00	.....
Galloways and Devons	8	100 00	90 00
Grades or crosses	37	430 00	430 00
Export steers	8	180 00	180 00
Bee carcasses	17	85 00	85 00
	105	$1,210 00	$1,095 00
Dairy cattle.			
Shorthorns	4	$150 00	$ 75 00
Ayrshires	9	284 00	171 50
Holsteins	8	250 00	210 00
Jerseys and Guernseys	.....	150 00	.....
Grades	8	150 00	140 00
	29	$984 00	$596 50

PROVINCIAL AUCTION SALES OF CATTLE: Provincial Auction Sales of Cattle were held during 1908 at Guelph, Port Perry and Ottawa, on March 4th, March 11th and January 24th, respectively. The following figures show the number of animals sold, total receipts, and the average price at each of these sales:

Guelph. 32 animals sold for $2,160. Average price, $67.50.

Port Perry: 15 animals sold for $1,210. Average price, $80.66.

Ottawa: 16 animals sold for $907.50. Average price, $56.72.

NUMBER OF MEMBERSHIPS RECEIVED THROUGH AFFILIATED ASSOCIATIONS.

Dominion Shorthorn Breeders' Association	1,180
Canadian Ayrshire Breeders' Association	107
Holstein-Friesian Association of Canada	200
Aberdeen-Angus Breeders' Society of Canada	16
Canadian Galloway Breeders' Association	10
Canadian Hereford Breeders' Association	40
Total	1,553

The memberships from the Dominion Shorthorn Breeders' Association and the Canadian Ayrshire Breeders' Association were not paid until after the 31st of December.

FINANCIAL STATEMENT

For the year ending December 31, 1908.

Receipts.		*Expenditures.*	
Cash on hand from previous year, as per last report	$286 89	Directors' expenses	$32 70
Members' fees	41 00	Stationery	1 50
Membership Fees:		Printing	41 90
Canadian Hereford Breeders' Ass'n, 1908	19 00	Auditor	2 00
Galloway Breeders' Ass'n, 1908	5 00	Telephone	1 50
Aberdeen-Angus Breeders' Ass'n, 1908	8 00	Total	$79 60
Holstein Breeders' Ass'n, 1908	100 00		
	$459 89	Balance cash on hand, December 31st, 1908	$380 29

Examined and found correct this 29th day of January, 1909.

(Signed J. M. DUFF, Auditor.

All of which is respectfully submitted.

(Sgd.) JOHN GARDHOUSE,
President.

(Sgd.) A. P. WESTERVELT,
Secretary-Treasurer.

Moved by JOHN GARDHOUSE, seconded by JOHN BRIGHT, "That the Officers' Report as read be adopted." Carried.

The clause in the report dealing with the development of the live stock trade with the West was carefully considered.

Mr. BRIGHT believed that the Western breeders would be opposed to the Association taking an active part in promoting Ontario trade in the West, as they might consider it would be an interference with their own business.

Mr. CLEMONS wished to see the trade encouraged and thought it could be best done by having a careful inspection made of all animals sent to the West to insure the Western breeders getting full value for their money.

Lt.-Col. MCCRAE approved of the suggestion in the report of placing the matter in a joint committee's hands.

A. W. Smith wished to have a joint committee consider the matter. In his opinion the Association should not hesitate to advertise Ontario stock and try to supply the demand which is now largely supplied by breeders in the States.

Moved by Mr. Mackie, seconded by Mr. Burt, "That the Executive Committee be appointed to meet with the joint committee from other Associations to consider the development of Western trade in live stock with power to take such action as they consider advisable." Carried.

Mr. T. Porter wished the Association to urge the directors of the Canadian National Exhibition to give more prize money for cattle. He stated that the prize money for the different breeds had been almost stationary for some years, while the expenses of feeding and keeping the stock at the exhibition had greatly increased. He would like to see classes added for animals bred in Canada. In referring to Western trade, Mr. Porter said that he thought Western breeders should come to Ontario for their stock instead of going to the Old Country. In his opinion it was too great a change of climate for animals to be taken direct from the Old Country to the Northwest.

Moved by Lt.-Col. McCrae, "That the executive be a committee to go to the Canadian National Exhibition Directors and urge that larger prizes be given for the different breeds of cattle."

Mr. Mackie stated that he was given to understand the Canadian National Exhibition were intending to give $600 for each class in the cattle department and in addition to this they would duplicate prize money given by breed associations.

A. W. Smith did not think that the executive committee should be sent to the directors of the exhibition, but that the representatives from the different breed associations on the cattle committee would look after the interests they represented.

Lt.-Col. McCrae then withdrew his motion.

Moved by John Bright, and seconded, "That the Secretary be instructed to cast a ballot electing the representatives from the different cattle associations to the Dominion Cattle Breeders' Association, directors of the Dominion Cattle Breeders' Association for 1909. " Carried.

Moved by Lt.-Col McCrae, seconded by A. W. Smith, "That the President consult with presidents of the other associations and the Department of Agriculture to arrange the appointment of an auditor." Carried.

Mr. Dods, Secretary, Union Stock Yards Company addressed the meeting, and explained the plans of the Stock Yards Company with reference to accommodation for shows and sales. He wished to secure co-operation and assistance of members of the Association.

Moved by A. W. Smith, seconded by Lt.-Col. McCrae, "That in view of the action taken by the Association last year and the small number of members present, no action be taken with regard to the Union Stock Yards." Carried.

The meeting then adjourned.

OFFICERS DOMINION CATTLE BREEDERS' ASSOCIATION.

President ..... John Gardhouse, Highfield.
Vice-President ..... W. W. Ballantyne, Stratford.
Secretary-Treasurer ..... A. P. Westervelt, Toronto.

Directors.

Shorthorns ..... John Isaac, Markham.
Arthur Johnston, Greenwood.

Herefords ..... W. H. Hunter, Orangeville.
R. J. Mackie, Oshawa.

Aberdeen-Angus ..... A. McKinnon, Hillsburg.
J. W. Burt, Coningsby.

Galloways ..... Robert Shaw, Brantford.
D. McCrae, Guelph.

Ayrshires ..... W. W. Ballantyne, Stratford.
W. F. Stephen, Huntingdon, Que.

Holstein-Friesian ..... B. Mallory, Belleville.
G. W. Clemons, St. George.

General Director ..... John Gardhouse, Highfield.

Ontario Agricultural College ..... Pres. G. C. Creelman.
Prof. G. E. Day.

Representatives to Fair Boards.

Canadian National Exhibition ..... John Gardhouse, Highfield.

Central Canada Exhibition ..... A. W. Smith, M.P., Maple Lodge.
R. Ness, Howick, Que.

Western Fair ..... Capt. T. E. Robson, London.
A. W. Smith, M.P., Maple Lodge.

Ontario Provincial Winter Fair ..... Arthur Johnston, Greenwood.
John Bright, Myrtle.
W. W. Ballantyne, Stratford.
R. S. Stevenson, Ancaster.

Eastern Ontario Live Stock and Poultry Show ... John Gardhouse, Highfield.
J. H. Grisdale. Ottawa.
Peter White, Pembroke.
W. F. Stephen, Huntingdon, Que.

(*A list of members of the Dominion Cattle Breeders' Association is published in the Appendix to this Report.*)

Dominion Sheep Breeders' Association.

ANNUAL MEETING.

The annual meeting of the Dominion Sheep Breeders' Association was held in the Temple Building, Toronto, February 5th, 1909, at 1.30 p.m.

Moved by A. W. SMITH, seconded by JNO. GARDHOUSE, "That as the Minutes of the last meeting have been published in the annual report, they be taken as read." Carried.

The President, JOHN CAMPBELL, occupied the Chair, and made the following remarks:—

A year ago, when we gathered at our annual meeting, we were congratulating each other on the splendid prosperity which we were then enjoying in our business, and with scarcely an exception, all signs for the future were bright and cheering. The trade in registered sheep had been, the previous season, one of the very best on record, while that for finished market lambs was all that could be desired. But, suddenly, and with nearly a clear sky, there fell in the following June, a "bolt from the blue." After some little distant murmurings, the after-clap came good and strong. One word explains it all—*scab*—which, together with its effects, caused the havoc. That miserable disease, so easy to be got rid of, was traced to a few consignments of both breeding and market sheep sent to the States. Some were loud in denouncing the American quarantine regulations, and ready to blame the American breeders. But the fault was ours, and what is most provoking, is the fact that a few, a very few, of our breeders, through sheer carelessness, or a worse fault, brought the whole of us to suffer for their misdoings. It is too bad that we, in a moment, found the value of our excellent and valuable flocks cut down to one-half their worth because of the greed of a few.

But dark as the outlook is, it has its "silver lining." While up and down the country, in several counties, the past month, I found the interest in sheep husbandry showing a wonderful increase, and rightly so, because not for twenty past years have the people realized as they now do the important and highly profitable place the band of sheep has on nearly every farm; and in all the years they could not invest in pure-bred flocks to so great an advantage to themselves as is possible this present season. We all feel that though the quarantine against scab and foot and mouth diseases have materially affected our trade for the present, yet it may and will prove to the country's advantage, if the people generally will waken up to see their present opportunity of buying when the bargain counters have choice goods marked down to much below value.

Let us take heart. This setback may prove a great blessing in disguise. Years ago we were despairing because American tariffs shut our barley out of that market. They certainly did not profit from their action, while as surely we profited from their doings. Losing that market for our barley brought about a far more profitable industry, the bacon hog trade. So may it be, and, I believe, so it can be made to be, in the present crisis. Let us not spare the knife, but use it freely on all but the best of our ram lambs the coming spring. Let us cull to the limit, and so continue raising the standard of our ideal of flocks till we reach such perfection that the great nation to the south of us will be compelled, by the super-excellence of our

sheep, to visit us to get the new blood which they must have to invigorate their flocks.

This is one of the most important gatherings of Canadian sheep breeders which ever convened. Let us face the situation calmly and with courage, then looking back, we may probably consider this day as one above all others,on which the welfare of our industry in a large measure depended.

REPORT OF THE DIRECTORS.

The directors submitted the following report:

RECORDS: The Financial Statement this year shows a balance on hand of $2,362.72. Of this amount, $503.68 has been charged against the Association by the record committee, which when paid will leave a balance of $1,859.04 to the credit of the Association. Provision should be made out of this amount for the publication of the record. The balance would be available to distribute among the various Provinces, in accordance with the provision made by the Association in 1907. This was that the profits from registration should be equitably divided among the various Provincial Associations for sheep in accordance with the number of registrations for each Province.

The monthly receipts on account of the Sheep Records are as follows:

January, 1908	$88 50	August	$271 30
February	51 50	September	190 84
March	105 85	October	122 55
April	39 90	November	101 15
May	51 90	December	144 35
June	57 25		
July	89 75		$1,314 84

The statement of registrations according to the Provinces is as follows:

Province.	Registrations.	Transfers.	Duplicate and New Certificates.
Ontario	1,021	77	5
Manitoba	34	2	.....
Saskatchewan	19	.....	.....
Alberta	92	4	.....
British Columbia	60	9	.....
Quebec	784	97	8
New Brunswick	24	.....	.....
Nova Scotia	23	.....	.....
Prince Edward Island	3	1	.....
	2,060	190	13

It is recommended that $1,000 be reserved for printing the record and that the work be proceeded with at once. This would still leave a balance of $859.04. It is further recommended that this amount should be divided according to the number of registrations among the different Provinces as follows:

Ontario	$425 27	New Brunswick	$10 08
Manitoba	14 17	Nova Scotia	9 59
Saskatchewan	7 92	Prince Edward Island	1 71
Alberta	38 36		
British Columbia	25 02		$859 04
Quebec	326 92		

The number of memberships from each Province for 1908, is as follows:

Ontario	94	British Columbia	3
Manitoba	5	Quebec	112
Saskatchewan	2	Maritime Provinces	4
Alberta	...		

ONTARIO PROVINCIAL WINTER FAIR: The following statement shows the number of entries in the classes for sheep at the Winter Fair at Guelph, 1908, together with the prize money offered in each class and the amount paid:

Class.	No. of entries.	Prizes offered.	Prizes paid.
Cotswolds	29	$131 00	$129 00
Lincolns	28	131 00	129 00
Leicesters	41	131 00	131 00
Oxfords	43	131 00	131 00
Shropshires	30	131 00	127 00
Southdowns	25	131 00	124 00
Dorset Horns	14	104 00	97 00
Hampshires and Suffolks	9	63 00	63 00
Grades or Crosses	45	152 00	152 00
	264	$1,105 00	$1,083 00

EASTERN ONTARIO LIVE STOCK AND POULTRY SHOW: The following statement shows the number of entries in the classes for sheep at the Eastern Ontario Live Stock and Poultry Show of 1909, the amount of prize money offered, and the amount paid:

Class.	No. of entries.	Prizes offered.	Prizes paid.
Cotswolds	12	$89 00	$72 00
Lincolns	12	86 00	86 00
Leicesters	3	89 00	23 00
Oxfords	9	89 00	64 00
Shropshires	23	86 00	86 00
Southdowns	19	89 00	86 00
Dorset Horns	9	89 00	64 00
Hampshires and Suffolks	6	74 00	46 00
Grades and Crosses	43	89 00	89 00
	136	$780 00	$616 00

SHIPMENTS OF PURE-BRED STOCK FROM ONTARIO TO WESTERN CANADA.

(See clause under this heading in the report of the Dominion Cattle Breeders' Association, page 7).

ONTARIO PURE-BRED STOCK TRADE. (See clause under this heading in the report of the Dominion Cattle Breeders' Association, page 8).

FINANCIAL STATEMENT.

For the year ending December 31st, 1908.

Receipts.		*Expenditures.*	
Cash on hand from previous year as per last report	$1,497 52	Directors' Expenses	$76 15
Members' Fees	229 00	Postage and Stationery	1 50
Registration Fees	1,118 84	Printing	58 75
Interest	47 04	Refund Fees	27 70
Membership, American Shropshire Association, 1908	60 00	Expenses of Delegates to Fair Boards	28 25
		American Shropshire Association	393 60
		Auditor	2 00
		Telegrams	1 73
Total	$2,952 40	Total	$589 68
		Balance cash on hand	$2,362 72

Examined and found correct, this 30th day of January, 1909.

(Signed) J. M. DUFF,
Auditor.

All of which is respectfully submitted,

Signed on behalf of the directors,

JOHN CAMPBELL, *President.*
ANDREW WHITELAW, *Vice-President.*
A. P. WESTERVELT, *Secretary-Treasurer.*

Moved by Lt.-Col. MCCRAE, seconded by JOHN GARDHOUSE, "That the Directors' Report be received and adopted." Carried.

Lt.-Col. MCCRAE gave a report for the Committee that went to Ottawa with reference to the duty on wool. The Committee interviewed the officials at Ottawa, including the Minister of Customs. They were surprised that the officials knew so little regarding the quantity of wool that came into Canada. The duty is supposed to be levied on certain kinds of wool, and although large quantities of this wool is being imported, only a few dollars had been paid in as duty during the last year. The Minister of Customs assured the Committee that the matter would be looked into, and stated that nothing could be done at that Session of Parliament.

Mr. LLOYD-JONES was pleased to know that more interest was being taken in the question of the duty on wool. He stated that Canadians were not in a position to compete with the wool growers in southern countries.

Mr. HARDING wanted to see an expert appointed to examine all wool coming into Canada to decide what wool comes into competition with Canadian wool and what wool should have duty paid on it.

A. W. SMITH advised the careful consideration of the matter as it must be considered from the standpoint of both the producer of wool and the user of clothing, as well as the manufacturer. To increase the duty on wool would mean that the cost of clothing would be increased.

Moved by J. G. HANMER, seconded by Lt.-Col. MCEWEN, "That the same Committee as last year, namely, Lt.-Col. McCrae, R. H. Harding, Jas. Bowman and J. M. Gardhouse, be reappointed to further consider the

wool question, and that the name of John Campbell be added to the Committee." Carried.

Mr. E. B. Bigger addressed the meeting, and explained with some detail, the wool industry from the manufacturer's standpoint.

Moved by John Gardhouse, seconded by Lt.-Col. McEwen, "That the Committee above named be instructed to appoint a small Committee, acting, if necessary, with a small Committee representing the woolen goods manufacturers, to request the Dominion Minister of Agriculture to arrange for a conference between wool growers and woolen goods manufacturers." Carried.

Moved by Lt.-Col. McCrae, seconded by John Gardhouse, "That this meeting express to Dr. Rutherford and Mr. Spencer their hearty appreciation of the admirable Bulletin which they have prepared on the sheep industry." Carried.

Moved by R. H. Harding, seconded by Andrew Whitelaw, "That the Winter Fair Board be requested to require that sheep exhibited at the Winter Fair must be owned by the exhibitor from the time of making entry instead of for three months previous to the Show." Carried.

Dr. Rutherford stated that after the meeting of the Directors of the Association last August, he had made two trips to Washington to interview the authorities there with regard to the sheep quarantine. He stated that up to the time of the outbreak of foot and mouth disease, negotiations were proceeding quite favorably. After that time he had been unable to obtain any further consideration of the matter by the United States officials. Dr. Rutherford stated that so far as he knew no sheep scab existed in Ontario at the present time. As soon as the embargo on account of the foot and mouth disease was raised, negotiations would be resumed with regard to raising of the quarantine on Canadian sheep for breeding purposes entering the United States.

Moved by Lt.-Col. McCrae, seconded by James Snell, "That the thanks of this meeting be tendered to Dr. Rutherford and his staff for the efficient work they have done in eradicating scab, and, that inasmuch as scab is not now known to exist in the Dominion of Canada, that further action towards the removal of the American quarantine be left in Dr. Rutherford's hands." Carried.

Notice was given by A. W. Smith of amendments to the Constitution to be made at the next annual meeting.

Moved by J. Lloyd-Jones, seconded by R. H. Harding, "That whereas it is advisable that working terms be arranged between The Canadian National Live Stock Records and the several American Sheep Record Associations. It is resolved that we, the Members of the Dominion Sheep Breeders' Association, urge upon the Record Board the necessity of making some arrangement, if possible, whereby sheep can be recorded in both the Canadian and American records so that only one certificate and one ear label will be required." Carried.

OFFICERS FOR 1909.

President ..... Andrew Whitelaw, Guelph.
Vice-President ..... J. G. Hanmer, Brantford.
Secretary-Treasurer ..... A. P. Westervelt, Toronto.

DIRECTORS.

Cotswolds	Lt.-Col. D. McCRAE, Guelph.
Leicesters	JAMES SNELL, Clinton.
Hampshires and Suffolks	JOHN KELLY, Shakespeare.
Southdowns	JOHN JACKSON, Abingdon.
Dorset Horns	R. H. HARDING, Thorndale.
Lincolns	J. T. GIBSON, Denfield.
Oxfords	J. E. COUSINS, Harriston.
Shropshires	C. W. GURNEY, Paris.
Ontario Agricultural College	Prof. G. E. DAY, Guelph.
General Directors	W. H. GIBSON, Beaconsfield, Que.
	A. W. SMITH, Maple Lodge.
National Live Stock Association	ANDREW WHITELAW, Guelph.
	J. G. HANMER, Brantford.

DELEGATES TO FAIR BOARDS.

Canadian National Exhibition: Hon. JOHN DRYDEN, Toronto; J. G. HANMER, Brantford.

Central Canada Exhibition: N. F. WILSON, Cumberland.

Western Fair, London: Lt.-Col. R. McEWEN, Byron; GEO. TELFER, Paris.

Provincial Winter Fair: A. W. SMITH, Maple Lodge; JOHN JACKSON, Abingdon; Lt.-Col. R. McEWEN, Byron; ROBERT MILLER, Stouffville.

Eastern Ontario Live Stock and Poultry Show: ANDREW WHITELAW, Guelph; W. A. WALLACE, Kars; R. RICHARDSON, South March; N. F. WILSON, Cumberland.

Winnipeg Industrial Exhibition: F. W. BROWN, Portage la Prairie; GEO. ALLISON, Burnbank, Man.

Vice-Presidents representing different Provinces:

British Columbia	A. C. AITKEN, Duncans, B.C.
Alberta	BRYCE WRIGHT, DeWinton, Alta.
Saskatchewan	PAUL BREDT, Regina, Sask.
Quebec	H. E. WILLIAMS, Knowlton, Que.
New Brunswick	T. A. PETERS, FREDERICTON, N.B.
Nova Scotia	M. CUMMING, TRURO, N.S.
Prince Edward Island	CEPHUS NUNN, Winsloe Road, P.E.I.

EXPERT JUDGES FOR SHEEP, FOR 1909.

COTSWOLDS: T. Hardy Shore, Glanworth; R. Miller, Stouffville; S. J. Lyons, Norval; Val. Fitcht, Oriel; Jas. Underhill, Claremont; F. Bonnycastle, Campbellford; Prof. G. E. Day, Guelph; Geo. Green, Fairview; J. C. Snell, London; John Rawlings, Ravenswood; Wm. Thompson, Uxbridge; Jno. Park, Burgessville; Robert Vance, Ida; Geo. Laird, Guelph.

Judges nominated for Toronto: S. J. Lyons, Norval; Prof. G. E. Day, Guelph.

Judges nominated for London: S. Dolson, Alloa; Robert Vance, Ida.

Judges nominated for Chicago: Prof. G. E. Day, Guelph; Robert Miller, Stouffville.

LEICESTERS: R. J. Garbutt, Belleville; Jas. Fennell, Bradford; H. B. Jeffs, Bond Head; A. E. Archer, Warwick; Geo. Whitelaw, Guelph; T. Hardy Shore, Glanworth; Abraham Easton, Appleby; E. Wood, Appleby; Wm. Parkinson, Eramosa; E. Parkinson, Eramosa; John Orr, Galt; Wm. McIntosh, Burgoyne; R. Eastwood, Mimico; John Kelly, Shakespeare; Andrew Thompson, Fergus; J. K. Campbell, Palmerston; J. C. Snell, London; G. B. Armstrong, Teeswater; Jno. Gibson, Denfield; C. E. Wood, Freeman; Jos. Gaunt, St. Helen's; J. M. Gardhouse, Weston; Andrew Whitelaw, Guelph; Wm. Whitelaw, Guelph; R. G. Martin, Marysville; A. W. Smith, Maple Lodge; H. G. Arnold, Maidstone; John Marshall, Cass City, Mich.; J. W. Murphy, Cass City, Mich.; Prof. Curtis, Ames, Ia.; Geo. Penhale, Exeter; Prof. G. E. Day, Guelph; M. Kennedy, Northwood; D. Lillico, Ayr; Jas. Douglas, Caledonia; Frank Shore, White Oak; John Gardhouse, Highfield; Wm. Beattie, Wilton Grove; A. J. McKay, Ailsa Craig; A. Hastings, Crosshill; J. Hastings, Crosshill; A. Deering, Crosshill; Jas. Snell, Clinton.

Judges nominated for Toronto: J. M. Gardhouse, Weston, or R. J. Garbutt, Belleville.

Judges nominated for London: Wm. Douglas, Tuscarora or J. T. Gibson, Denfield.

Judges nominated for Winter Fair: Jas. Douglas, Caledonia.

Judges nominated for Chicago: C. E. Wood, Freeman, or J. M. Gardhouse, Weston.

NOTE: Where two Judges are given, the first-named Judge is the first choice of the Association.

DORSETS: John Kelly, Shakespeare; Robert Miller, Stouffville; J. M. Gardhouse, Weston; John Campbell, Woodville; J. G. Hanmer, Brantford; Prof. Curtis, Ames, Ia; Thos. W. Hector; Springfield-on-Credit; G. P. Everett, Mt. Vernon; H. N. Gibson, Delaware; E. O. Denton, Somerset, N.Y.; G. McKerrow, Sussex, Wis.; John Jackson, Abingdon; Fred Silversides, Uxbridge; R. H. Harding, Thorndale.

Judges nominated for Toronto: John Campbell, Woodville; A. S. Forster, Oakville.

Judges nominated for London: J. G. Hanmer, Brantford; (Reserve) J. M. Gardhouse, Weston.

SOUTHDOWNS: John Jackson, Abingdon; W. H. Beattie, Wilton Grove; W. H. Gibson, Beaconsfield, Que.; H. N. Gibson, Delaware; Robert Miller, Stouffville; Geo. Telfer, Paris; J. G. Hanmer, Brantford; J. C. Duncan, Orchard Park, N.Y.; Robert McEwen, Byron; H. L. Compton, Monroe, Ohio; Frank Klienhientz, Madison, Wis.; Prof. G. E. Day, Guelph; James Telfer, Paris; George Allen, Paris.

Judge nominated for Toronto: Frank Klienhientz, Madison.

Judge nominated for London: W. H. Beattie, Wilton Grove.

OXFORDS: Prof G. E. Day, Guelph; John Harcourt, St. Ann's; Smith Evans, Guelph; Jas. Tolton, Walkerton; R. J. Hine, Dutton; Henry Arkell, Arkell; Wm. Dickson, Mildmay; J. H. Jull, Mt. Vernon; W. J. Arkell, Teeswater; Jno. E. Cousins, Harriston; Arch. McKenzie, Corwhin; R. E. Birdsall, Birdsall; J. C. Cooper, Picton; Wm. Newman, Cherry Valley; Wm. Arkell, Teeswater; L. Parkinson, Eramosa; S. C. Ketchen, Bloomburg; W. Lee, Simcoe; Prof. M. Cumming, Truro, N. S.; Walter Elliott, Kelso; J. E. Cerswell, Bond Head; Prof. R. Wade, O.A.C., Guelph; Jas. Thompson, Jr. Mildmay; A. Stevenson, Atwood.

Judges nominated for Toronto: Henry Arkell, Arkell, (Reserve) John Harcourt, St. Ann's.

Judges nominated for London: J. E. Cousins, Harriston; (Reserve) J. E. Birdsall, Birdsall.

Judges nominated for Ottawa: T. R. Arkell, Ottawa.

Judge nominated for Winter Fair: J. E. Cousins, Harriston.

HAMPSHIRES AND SUFFOLKS: R. Gibson, Deleware; Henry Arkell, Arkell; W. H. Beattie, Wilton Grove; James Bowman, Guelph; John Kelly, Shakespeare; Geo. L. Telfer, Paris; Prof. G. E. Day, Guelph; H. N. Gibson, Deleware; W. H. Arkell, Guelph; W. R. Bowman, Mount Forest; Jno. Campbell, Woodville; R. J. Stone, Stonington, Ill.; J. Milton, Marshall, Mich.; Harry Thornton, Warren, Ind.; Frank Klienhientz, Madison, Wis.

Judges nominated for Toronto: Henry Arkell, Arkell; Prof. H. S. Arkell, St. Anne de Bellevue, Que.

Judges nominated for London: Prof. G. E. Day, Guelph; Jno. Gibson, Denfield; John Campbell, Woodville.

SHROPSHIRES: W. H. Beattie, Wilton Grove; R. Miller, Stouffville; J. G. Hanmer, Brantford; J. Campbell, Woodville; D. G. Hanmer, Burford; W. G. Pettit, Freeman; D. J. Campbell, Woodville; H. N. Gibson, Millbrook, N.Y.; Geo. Hindmarsh, Ailsa Craig; C. W. Gurney, Paris; J. Miller, Brougham; H. Hanmer, Burford; J. C. Duncan, Orchard Park, N.Y.; Prof. G. E. Day, Guelph; A. Shields, Caistorville; Geo. Crawford, Minesing; John Lloyd-Jones, Burford; W. D. Monkman, Bond Head; W. A. Dryden, Brooklin.

Judges nominated for Toronto: J. C. Duncan, Orchard Park, N. Y.; (Reserve) H. N. Gibson, Millbrook, N.Y.; (Reserve) W. H. Beattie, Wilton Grove.

Judges nominated for London: J. Shields, Caistorville; (Reserve) Geo. Hindmarsh, Ailsa Craig.

Judge nominated for Ottawa: D. G. Hanmer, Burford.

Judges nominated for Winter Fair: J. C. Duncan, Orchard Park, N. Y.; (Reserve) Prof. G. E. Day, Guelph.

Judges nominated for Calgary: Medium and Shortwools, J. C. Duncan, Orchard Park, N.Y.; (Reserve) Prof. G. E. Day, Guelph.

LINCOLNS: John Gardhouse, Highfield; Leonard Parkinson, Eramosa; Robt. Robson, Ilderton; J. H. Patrick, Ilderton; E. Parkinson, Eramosa; Herbert Lee, Highgate; Prof. G. E. Day, Guelph; D. Campbell, Strathburn; John T. Gibson, Denfield; Graham Walker, Ilderton; Wm. Oliver, Avonbank; John Mitchell, Glencoe.

Judge nominated for Toronto: John Gardhouse, Highfield.

Judge nominated for London: Herbert Lee, Highgate.

Judge nominated for Ottawa: Leonard Parkinson, Eramosa.

Judge nominated for Winter Fair: John Gardhouse, Highfield.

(A list of members of the Dominion Sheep Breeders' Association is published in the appendix to this Report.)

Dominion Swine Breeders' Association.

ANNUAL MEETING.

The annual meeting of the Dominion Swine Breeders' Association was held in the Temple Building, Toronto, February 3, 1909, at 9.30 a.m.

The President, D. C. Flatt, occupied the chair.

On motion the minutes of the last meeting were taken as read and adopted.

DIRECTORS' REPORT.

The Secretary read the Directors' Report as follows:—

Swine Records: The number of registrations for the different breeds appearing in Volume 19 of the Record is as follows:

Berkshires	1,475	Tamworths	317
Yorkshires	2,126	Duroc-Jerseys	23
Chester Whites	421	Essex	30
Poland Chinas	43		

Registrations: The Statement of Registrations according to the Provinces is as follows:

Province.	Registrations.	Transfers.	Duplicate and New Certificates.	Members (Pd. at Ottawa.)
Ontario	2,135	191	12	145
Manitoba	555	77	8	63
Saskatchewan	299	49	4	45
Alberta	238	35	5	32
British Columbia	99	5	.....	7
Quebec	859	81	5	63
New Brunswick	79	3	.....	9
Nova Scotia	86	3	.....	4
Prince Edward Island	77	15	.....	9
United States	12	.....	1	1
Totals	4,439	459	35	378

The monthly receipts for 1908, on account of the Swine Records at Ottawa, are as follows:

January	$335 25	August	418 00
February	262 80	September	332 90
March	240 00	October	213 35
April	212 90	November	218 50
May	257 65	December	357 45
June	260 45		
July	312 75		$3,422 00

Grants to Provincial Associations.

The following amounts have been paid to the Provincial Associations, out of profits on registrations and memberships for 1907:

Manitoba	$287 08	Quebec	345 03
Saskatchewan	96 09	Maritime Provinces	135 74
Alberta	80 99		
British Columbia	36 29		$981.22

The names of the Associations and the secretaries to whom the refunds of profits and membership have been paid, are as follows:

Name of Association.	*Name and address of Secretary.*
The Sheep and Swine Breeders' Association of Manitoba	A. W. Bell, Winnipeg, Man.
The Saskatchewan Stock Breeders' Association	J. Breckin, Regina, Saskatchewan.
The Alberta Swine Breeders' Association	E. L. Richardson, Calgary, Alta.
The British Columbia Stock Breeders' Association	F. M. Logan, Victoria, B.C.
The Maritime Stock Breeders' Association	E. B. Elderkin, Amherst, N.S.

Besides the memberships, the profits from registrations for 1908, amount to $186.42. According to the arrangement for the distribution of these profits and memberships, the different provinces have been credited with the following amounts for 1908:

Province.	Number of members paid 1908.	Number of Registrations.	Amount of memberships.	Amount of 1908 memberships refunded.	Amount of 1908 memberships to be refunded.	Profits from Registrations.	Total.
			$ c.	$ c.	$ c.	$ c.	$ c.
Ontario	180	2,135	360 00	.....	.....	89 90	449 90
Manitoba	65	555	130 00	110 00	20 00	23 37	153 37
Saskatchewan	46	299	92 00	56 00	36 00	12 60	104 60
Alberta	32	238	64 00	34 00	30 00	10 02	74 02
British Columbia	7	99	14 00	6 00	8 00	4 17	18 17
Quebec	90	859	180 00	98 00	82 00	36 17	216 17
New Brunswick	8	79	16 00				
Nova Scotia	4	86	8 00	20 00	22 00	10 19	52 19
Prince Edward Island	9	77	18 00				

In addition to these amounts there is $433.56 of the Ontario surplus unexpended. This is made up of the Ontario surplus of 1907, $556.22, less $122.66 which was spent in 1908, making the total amount available for Ontario, $883.46.

It is recommended that out of the profits for 1908, amounting to $449.90, the following should be paid:

1. To the Ontario Large Yorkshire Swine Breeders' Society, the profits from Yorkshire registrations amounting to $215.67.

2. To the Ontario Berkshire Society, the profits from Berkshire registrations, amounting to $149.75.

From the balance of the profits from Ontario and the Ontario surplus, there should be paid in grants to Fair Associations as follows:—On conditions that the prizes for swine given by these Exhibitions in 1909, should be at least as large as in 1908:

Provincial Winter Fair	$75 00
Canadian National Exhibition	100 00
Western Fair, London	50 00
Eastern Ontario Live Stock and Poultry Show	50 00
Central Canada Exhibition	50 00

This money will be given with the understanding that the prizes for Yorkshires and Berkshire classes at these Shows should not be increased out of these grants. This will still leave an Ontario surplus of $193.04.

Shipments of Pure-Bred Stock from Ontario to Western Canada.

(See clause under this head in the report of the Dominion Cattle Breeders' Association, page 7).

Ontario Provincial Winter Fair.

The following table shows the number of entries in 1908 in the different classes, together with the amount of prize money offered and won:

Class.	No. of entries.	Prizes offered.	Prizes paid.
Yorkshires	52	$309 00	$304 00
Berkshires	54	151 00	151 00
Tamworths	31	151 00	151 00
Chester Whites	13	124 00	108 00
Grades or Crosses	48	120 00	120 00
Bacon Hogs	43	305 00	305 00
	241	$1,160 00	$1,139 00

Eastern Ontario Live Stock and Poultry Show.

The statement below shows the number of entries, the prizes offered and the prizes won at the Eastern Ontario Live Stock and Poultry Show of 1909:

Class.	No. of entries.	Prizes offered.	Prizes paid.
Yorkshires	26	$114 00	$114 00
Berkshires	11	84 00	45 00
Tamworths	16	89 00	85 00
Grades or Crosses	22	89 00	80 00
Export Bacon Hogs	15	185 00	185 00
	90	$561 00	$509 00

Ontario Pure-Bred Stock Trade.

(See clause under this head in the report of the Dominion Cattle Breeders' Association, page 8).

FINANCIAL STATEMENT.

For the year ending December 31st, 1908.

Receipts.

Cash on hand from previous year, as per last report	$3,037 47
Membership fees	870 00
Registrations	2,672 00
Interest	44 90
Miscellaneous	1 00
	$6,625 37

Expenditures.

Directors' and Committee's expenses		$266 10
Balance of amount paid to Record Committee for 1907		166 01
Amount paid to Record Committee, 1908		1,200 00
Refund fees		110 35
Printing and Binding Records		744 90
Printing and Stationery		41 10
Grants:		
Manitoba		397 08
Quebec		345 03
British Columbia		32 29
Saskatchewan		112 09
Maritime Provinces		91 74
Alberta		72 99
Ontario:		
Large Yorkshire Breeders' Society	$539 97	
Berkshire Breeders' Society	316 47	
Central Canada Exhibition Ass'n., 1908	50 00	
Canadian National Exhibition, 1908	100 00	
Western Fair Association, 1908	50 00	
Eastern Ontario Live Stock and Poultry Show, 1908	100 00	
		1,156 44
Auditor		2 00
Miscellaneous		1 02
Total		$4,739 14
Balance cash on hand		$1,886 23

Examined and found correct, this 30th day of January, 1909.

(Signed) J. M. Duff,
Auditor.

All of which is respectfully submitted.

Signed on behalf of the Directors,

D. C. Flatt, *President.*
Wm. Jones, *Vice-President.*
A. P. Westervelt, *Secretary-Treasurer.*

Moved by Thos. Teasdale, seconded by E. E. Martin, "That the Directors' Report be adopted." Carried.

On motion it was resolved that the Executive Committee be empowered to act with the Executives of the other interested associations to take such action as they deem advisable with reference to western trade in live stock.

The Secretary read a petition that is being circulated among sheep breeders, and also the following motion, which was drafted by a committee appointed by the Directors: Moved by Jos. Featherston, seconded by D. DeCourcy: "That the members of the Dominion Swine Breeders' Association in annual meeting assembled, having learned of a petition about to be presented to the Honourable, the Minister of Agriculture for the Dominion of Canada, asking that the embargo on American hogs coming into Canada should be raised, wish to strongly express our disapproval of such action being taken on account of the great danger of hog cholera being distributed throughout this Province which the careful administration of the Dominion

Department of Agriculture has almost eradicated. It is further resolved that a copy of this resolution be immediately forwarded to the Hon. Sydney Fisher, Minister of Agriculture, and also that the Minister of Agriculture be requested to obtain accurate information as to the calling of each person signing the petition."

In discussing this motion, a number of members expressed their strong disapproval of the action of the sheep breeders who were responsible for the circulation of the petition.

The special committee consisting of Wm. Jones, R. H. Harding, and J. E. Brethour, appointed by the Directors to draft a resolution, presented their report.

Moved by W. H. Durham, seconded by T. A. Cox, "That the Executive be empowered to deal with the recommendation regarding the deputation to Denmark." Carried.

Moved by John Kelly, seconded by H. J. Davis, "That Messrs. D. C. Flatt, Jos. Featherston and J. E. Brethour be a deputation to wait on the Minister of Agriculture regarding the petition of the sheep breeders in case this action is considered advisable." Carried.

D. C. Flatt gave a report of the committee that went to Ottawa to ask that a higher duty be placed on American hogs coming into Canada. He stated that the committee had been kindly received by Hon. Mr. Fisher and Hon. Mr. Patterson. The Ministers informed the deputation that they would be unable to do anything to relieve the situation before the next session of Parliament at least. Mr. Flatt thought that if necessary, the Anti-Dumping clause of the Customs Tariff might be used to keep the hogs from being imported.

Moved by W. H. Durham, seconded by Geo Douglas, "That it is recommended that Judges on swine at all Fairs and Exhibitions should be instructed to use their discretion in discarding animals that in their judgment are not shown in proper class and section for their ages." Carried.

Moved by J. E. Brethour, seconded by R. H. Harding, "That secretaries of Fairs and Exhibitions be given information with regard to the suggestion embodied in the above resoluton." Carried.

Moved by Jos. Featherston, seconded by R. J. Kelly, "That the representatives to the Canadian National Exhibition urge that a class be added for Chester Whites." Carried.

OFFICERS FOR 1909.

President	D. C. Flatt, Millgrove.
Vice-President	Wm. Jones, Zenda.
Secretary-Treasurer	A. P. Westervelt, Toronto.
Executive Committee	D. C. Flatt, Millgrove.
	Wm. Jones, Zenda.
	J. E. Brethour, Burford.
	A. P. Westervelt, Toronto.

Directors.

Berkshires	W. H. Durham, Toronto.
Yorkshires	J. E. Brethour, Burford.
Chester Whites	D. DeCourcy, Bornholm.
Poland Chinas	W. M. Smith, Scotland.
Tamworths	Geo. Douglas, Mitchell.
Essex	Jos. Featherston, Streetsville
General Director	R. H. Harding, Thorndale.
Ontario Agricultural College	Prof. G. E. Day, Guelph.

REPRESENTATIVES TO FAIR BOARDS.

Canadian National Exhibition: D. C. FLATT, Millgrove; SAMUEL DOLSON, Norval Station.

Central Canada Exhibition: R. O. MORROW, Hilton; R. J. GARBUTT, Belleville.

Western Fair: GEO. DOUGLAS, Mitchell; R. H. HARDING, Thorndale.

Provincial Winter Fair: Prof. G. E. DAY, Guelph; G. B. HOOD, Guelph; WM. JONES, Zenda; R. H. HARDING, Thorndale.

Eastern Ontario Live Stock and Poultry Show: D. C. FLATT, Millgrove; P. O. COLLINS, Bowesville; J. C. SMITH, Ottawa; W. H. MCNISH, Lyn.

EXPERT JUDGES FOR SWINE FOR 1909.

BERKSHIRES: John Kelly, Shakespeare; J. J. Wilson, Milton; H. Mason, Scarboro; Adam Thompson, Shakespeare; James Hamilton, Shakespeare; Wm. Wilson, Snelgrove; J. C. Smith, Ottawa; X. Plaunt, Northcote; Samuel Dolson, Norval Station; Hugh G. Clark, Georgetown; P. W. Boynton, Dollar; Alex. Smith, Maple Lodge; W. G. Caven, Toronto; Peter McEwen, Kertch; John Boyes, Jr., Churchill; J. C. Snell, London; Thomas Teasdale, Concord; Geo. Green, Fairview; Robert Vance, Ida; T. A. Cox, Brantford; C. R. Decker, Chesterfield; Jos. Barnett, Brooklin; E. E. Martin, Canning; H. B. Jeffs, Bond Head; Wm Linton, Aurora; E. Brien, Ridgetown; W. A. Shields, Milton; D. J. Gibson, Bowmanville; S. J. Lyons, Norval; J. L. Clerk, Norval; Aiken Dolson, Alloa; W. H. Durham, Toronto; Frank Teasdale, Concord; J. Weir, Northfield Centre; J. Lawrence, Oxford Centre; Wm. Coats, Malton; H. Koelln, Glen Allan; S. Lemon, Kettleby; W. W. Brownridge, Oak Grove.

Judges nominated for Toronto: Samuel Dolson, Norval Station; (Reserve) E. E. Martin, Canning.

Judges nominated for London: S. J. Lyons, Norval; Reserve, P. W. Boynton, Dollar.

Judge nominated for Guelph: Thomas Teasdale, Concord.

Judge nominated for Ottawa: H. G. Clark, Georgetown.

YORKSHIRES AND TAMWORTHS: David Barr, Jr., Renfrew; E. A. Kipp, Chilliwack, B.C.. Jas. Bray, Longburn, Man.; Lou Rogers, Weston; Geo. D. Betsner, Copetown; R. J. Kerr, Mimosa: J. E. Brethour, Burford; W. R. Bowman, Mount Forest; Wm. Jones, Zenda; R. J. Garbutt, Belleville; R. H. Harding, Thorndale; N. M. Blain, St. George; J. H. Simonton, Chatham; G. North, Marden: A. Elliott, Galt; L. F. Master, Haysville; A. C. Hallman, Breslau; D. G. Hanmer, Burford; A. Laurie, Wolverton; Wm. Davies, Toronto; Richard Gibson, Delaware; Henry Dedels, Kossuth; G. B. Hood, Guelph; F. Shore, White Oak; Jos. Featherston, Streetsville; H. E. Sharp, Ida; A. F. McGill, Hillsburg; J. M. Hurley, Belleville: Geo. Grier, Grand Valley; Jos. Stephen, Trout River, Que.; Jos. Fletcher, Oxford Mills; Robert Nichol, Brussels; A. F. Foreman, Collingwood; Wm. Howe, North Bruce; Prof. G. E. Day, Guelph; H. J. Davis, Woodstock; D. C. Flatt, Millgrove; W. R. McDonald, Ridgetown; W. Elliott, Galt; R. G. Martin, Marysville; J. E. Cousins, Harriston; Geo. Green, Fairview; J. W. Callbeck, Augustine Cove, P.E.I.; J. G. Clark, Ottawa; J. C. Smith, Ottawa: D. Drummond, Ottawa; A. Carey, Millgrove; Jas. Yule, East Selkirk; A. W. Ross, Bromley; J. J. Pearson, Cooksville; R. F. Duck, Port Credit; Duncan Anderson, Rugby; Thos. Hurley, Belleville; J. H. Grisdale, Ottawa; A. A. Colwill, Newcastle; M. Cumming, Truro, N.S..; R. O. Morrow, Hilton; Geo. Douglas, Mitchell; Jas. Douglas, Mitchell; W. A. Trann, Cedar Grove; P. O. Collins, Bowesville; L. Foster, Myrtle; J. G. Foster, Myrtle; J. R. Flatt, Millgrove; J. Duck, Port Credit; Ken. Featherston, Streetsville; J. W. Black, Winnipeg, Man.; Herbert German, St. George; N. Wilson, Fergus; C. Currie, Morriston; Gus. A. Langelier, Quebec; Richard Birch, Anderson; H. Koelln, Glen Allan.

Judges nominated for Toronto: Yorkshires—J. E. Brethour, Burford; R. J. Garbutt, Belleville. Tamworths—J. C. Nichol, Hubrey. Bacon Hogs—J. E. Brethour, Burford; R. J. Garbutt, Belleville; J. C. Nichol, Hubrey.

Judges nominated for London: A. C. Hallman, Breslau; (Reserve) G. B. Hood, Guelph.

Judge nominated for Ottawa: A. A. Colwill, Newcastle.

Judges nominated for Guelph: Pure Breds—A. C. Hallman, Breslau; Prof. Day, Guelph. Bacon Hogs—Wm. Jones, Zenda; J. C. Nichol, Hubrey; R. J. Garbutt, Belleville.

POLAND CHINAS AND DUROC-JERSEYS: L. R. Jarvis, Chatham; G. D. Campbell, Harwich; Mac. Campbell, Harwich, D. C. Flatt, Millgrove; D. DeCourcey, Bornholm; G. B. Hood, Guelph; Geo. Green, Fairview; Wm. Jones, Zenda; W. H. Smith, Scotland; C. A. Smith, Scotland; J. E. Brethour, Burford; R. H. Harding, Thorndale; Geo. Bennett, Charing Cross; Jas. Bennet, South Burton; Jos. Featherston, Streetsville: Prof. G. E. Day, Guelph; Jos. McGarvin, Chatham; R. Willis, Glen Meyer.

CHESTER WHITES: E. D. George, Putnam; R. E. Birdsall, Birdsall; Albert Barachy, Bloomington; Wm. Jones, Zenda; J. C. Snell, London; Geo. Green, Fairview; D. DeCourcy, Bornholm; R. H. Harding, Thorndale; G. B. Hood, Guelph; Gideon Snyder, Jarvis; Jos. Featherston, Streetsville; G. Bennett, Charing Cross; J. C. Nichol, Hubrey; Prof. G. E. Day, Guelph; W. E. Wright, Glanworth; D. C. Flatt, Millgrove; Geo. Douglas, Mitchell; J. C. Smith, Hintonburg; R. J. Garbutt, Belleville.

Judges nominated for London: D. C. Flatt, Millgrove; G. B. Hood, Guelph.

Judges nominated for Toronto: If Chester Whites are shown by themselves, G. B. Hood, but if breeds are shown together, R. J. Garbutt, Belleville.

Judge nominated for Ottawa: A. A. Colwill, Newcastle.

Judge nominated for Guelph: G. B. Hood, Guelph.

ESSEX: H. G. Clark, Georgetown; G. B. Hood, Guelph; R. J. Garbutt, Belleville; R. H. Harding, Thorndale; Wm. Jones, Zenda; James Main, Milton.

(A list of members of the Dominion Swine Breeders' Association is published in the Appendix to this Report.)

Western Ontario Poultry Association.

ANNUAL MEETING.

The annual meeting of the Western Ontario Poultry Association was held in the City Hall, Guelph, on Thursday, December 10th, 1908, at 1.30 p.m. The President, Wm. McNeil, occupied the chair.

The President in opening the meeting thanked the individual members of the Association for the efforts they had put forth in making such a large showing at the Winter Fair. He also referred to the good work done by the Committee who had charge of the special prize list and expressed appreciation of the kindness of specialty clubs in giving special prizes.

The Secretary read the minutes of the last annual meeting and also the minutes of the Directors' meeting. Upon motion of Messrs. DONOVAN and BARBER, the minutes were adopted as read. The financial statement for the year ending October 31st, 1908, was read.

Moved by Mr. BELL, seconded by Mr. DONOVAN, "That the financial statement as read be adopted. Carried.

Moved by Mr. DONOVAN, seconded by Mr. CROWE, "That it having come to the knowledge of this Association that the Canadian National Exhibition have ordered plans for the erection of a new poultry building, that this Association wishes to tender a hearty vote of thanks to the Canadian National Exhibition Association, and would, if given an opportunity, have a committee to confer with them as to details." Carried.

Moved by Mr. DONOVAN, seconded by Mr. GRAHAM, "That the chair appoint a committee of three to be available to confer with the Canadian National Exhibition." Carried.

The chair named H. B. Donovan, F. A. Woodward and W. R. Graham as the committee.

OFFICERS FOR 1909.

Honorary-Presidents ..... Hon. JAS. DUFF, M.P.P., Toronto.
Hon. NELSON MONTEITH, Stratford.
President ..... L. H. BALDWIN, Toronto.
1st Vice-President ..... RICHARD OKE, London.
2nd Vice-President ..... W. J. TEALE, Guelph.

DIRECTORS

Jos. RUSSELL, M.P., Toronto.
A. W. TYSON, Guelph.
G. G. HENDERSON, Hamilton.
T. H. SCOTT, St. Thomas.
P. L. GREER, Owen Sound.
T. J. KILEY, London.
N. K. CORNWALL, Thamesville.
C. H. WILSON, Hawkestone.

Representatives to Canadian National Exhibition: WM. MCNEIL, London; WM. BARBER, Toronto. (Second representative if two can be secured).

Representatives to Provincial Winter Fair: WM. MCNEIL, London; A. W. TYSON, Guelph; L. H. BALDWIN, Toronto; W. TREGWIN, St. Mary's.

Moved by Mr. JARVIS, seconded by Mr. OKE, "That this Association in annual meeting assembled desires to express its sympathy with the wife of our late esteemed and respected past president, Mr. Allan Bogue, and that this resolution be recorded on the minutes and a copy be sent to Mrs. Bogue." Carried.

A hearty vote of thanks was unanimously passed expressing the appreciation of the Association for the good work done by Mr. McNeil during his term of office as President of the Association.

The meeting then adjourned.

FINANCIAL STATEMENT.

For the year ending October 31st, 1908.

Receipts.		*Expenditures.*	
Members' fees	$320 00	Balance due Treasurer as per last report	$12 70
		Directors' expenses	12 90
		Balance of memberships transferred to Winter Fair	307 30
		Total	332 90
		Balance due Treasurer...	12 90

Examined and found correct this 9th day of December, 1908.

(Signed) J. M. Duff,
Auditor.

(Signed) Wm. McNeil, *President.*

(Signed) A. P. Westervelt, *Treasurer.*

DIRECTORS' MEETING.

Immediately after the annual meeting the newly elected Directors met, with Mr. Baldwin in the chair.

The Secretary read communications from the Secretary of the Canadian Leghorn Club, the Secretary of the Canadian Game and Game Bantam Association, the Secretary of the Turkey and Water Fowl Club, the Secretary of the Canadian Ornamental Bantam Association. That part of the communication from the Turkey and Water Fowl Club, recommending that in the event of a new building being procured for the next show, that an aisle be provided for turkeys and water fowl, with coops raised off the floor, was referred to the Winter Fair Board.

The following recommendations were made regarding changes in the prize list for the classification of the poultry department for the next show:

1. That as there are about 20 Anconas in the present Show, a separate class should be given for them. (To be classified with the Mediterraneans).
2. That the class for Polands, Buff Laced be changed to read Polands, Buff Laced Bearded.
3. That the class for Game Bantams, Duckwing be divided making a class each for Game Bantams, Golden Duckwing and Game Bantams, Silver Duckwing.
4. That the class for Bantams, White Booted be made into two classes; one for Bantams, White Booted Plain, and one for Bantams, White Booted, Whiskered.
5. That the class for Bantams, Brahma, be divided making classes for Brahma Light and Bantams, Brahma Dark, but if the extra class cannot be added, change the wording of the class to Bantams, Brahma Light and have the Bantams, Brahma Dark show in the Bantams, A.O.V.
6. That a class be added for Mallard Ducks.

7. That the following classes be added to the Pigeon list for birds bred in 1909: Carrier, any color; Pouter, any color; Jacobin, any color; Magpie, any color; Swallow, any color; Owl, African, any color; Owl, English, any color.

8. That the class for Pouter, Pigmy be divided making a class for Pouter, Pigmy, Blue or Black Pied and a class for Pouter, Pigmy, any other color.

9. That there be only one class for Trumpeter to read, Trumpeters, any color.

10. That the class for Jacobin, Red or Yellow be divided making classes for Jacobin, Red and for Jacobin Yellow.

11. That the class for Fantail, Blue or Black be divided making classes for Fantail, Blue and for Fantail, Black.

12. That the class for Magpie, Red or Yellow be divided making classes for Magpie, Red and for Magpie, Yellow.

13. That a section be added to the Sale Class for Pigeons, any variety.

The following judges for the Fair of 1909 were recommended to the Provincial Winter Fair Board:

Plymouth Rocks: H. P. Schwab, Irondequoit, N.Y.

Buff Orpingtons and all Leghorns, except R. C. White: Richard Oke, London.

Spanish, Black and White Orpingtons, Dominiques, Partridge Wyandottes, Javas, La Fleche, Creve-Coeurs: N. Cosh, Box K., Auburn, N.Y.

Games, Game Bantams, Asiatics: S. Butterfield, Windsor.

Ornamental Bantams, Silkies, Sultans: Wm. McNeil, London.

Rhode Island Reds and all Wyandottes, except Partridge: James Tucker, Concord, Mich.

Minorcas, Andalusians and R. C. White Leghorns: J. H. Minshall Brantford.

Polands, Dorkings, Red Caps, Houdans, A.O.V. Fowls, Water Fowl: L. G. Jarvis, Grimsby.

Turkeys: James Anderson, Guelph.

Pigeons: C. F. Wagner, Toronto; Chas. Currier, Toronto.

Ornamentals: Wm. Barber, Toronto.

Utility Pen, Dressed Poultry: Wm. Barber, Toronto; W. R. Graham, Guelph.

Moved by Mr. Henderson, seconded by Mr. Oke, "That the recommendations for changes in the prize list be approved." Carried.

Moved and carried, "That the recommendations for judges be approved."

In connection with the judging of Pigeons, it was suggested that Mr. Currier judge Carriers, Pouters, Barbs, Jacobins and Owls.

The meeting then adjourned.

Eastern Ontario Poultry Association.

ANNUAL MEETING.

The annual meeting of the Eastern Ontario Poultry Association was held in the Lecture Room in the Fair Building, Ottawa, on Thursday Evening, January 22nd, at 7.30 p.m.

The President, George Robertson, was in the chair.

Moved by Mr. Belford, seconded by Mr. John Bogue, "That the minutes of the last meeting be taken as read." Carried.

The Treasurer reported that two memberships had been paid into the Association, and the money was used for the special prizes for Poultry at the Eastern Ontario Poultry Show.

Moved by Mr. Bogue, seconded by Mr. McNeil, "That Clause 5 of the Constitution be amended to read as follows: 'The membership of this Association shall consist of exhibitors at the Eastern Ontario Live Stock and

Poultry Show, whose entry fees in the poultry department amount to one dollar or more'." Carried.

Moved by Mr. BELFORD, seconded by Mr. GARLAND, "That Clause 9 of the Constitution and By-laws should be amended to read as follows: 'At the annual meeting each year ten directors shall be appointed from among the general membership of the Association, also one or more auditors, etc.'" Carried.

Moved by Mr. BOGUE, seconded by Mr. MCNEIL, "That Golden Unbearded Polands be put on the prize list, making it read 'Golden Bearded' and 'Golden Unbearded Polands'." Carried.

Moved by Mr. MCNEIL, seconded by Mr. BOGUE, "That 'Silver Unbearded Polands' be added to the prize list, making it read 'Silver Bearded Polands' and 'Silver Unbearded Polands'." Carried.

Moved by Mr. BELFORD, seconded by Mr. PEAKER, "That the prize list be changed so as to read 'Blue Checkered Flying Homers' instead of 'Blue Checkered Show Homers'." Carried.

Moved by Mr. PEAKER, seconded by Mr. BELFORD, "That a section be added for 'Any Other Variety' in the Selling Class, and also that a section be added for 'Ducks' in the Selling Class." Carried.

Moved by Mr. GARLAND, seconded by Mr. BLAKNEY, "That Black Wyandottes be added to the prize list." Carried.

Moved by Mr. BOGUE, seconded by Mr. MCNEIL, "That 'Sultans' be added to the prize list." Carried.

Moved by Mr. BELFORD, seconded by Mr. HIGMAN, "That the appointment of Judges be left to the Board of Directors." Carried.

Mr. HIGMAN suggested that Mr. GEORGE ROBERTSON be added as one of the Judges in addition to the five who acted this year.

ELECTION OF OFFICERS.

Honorary Presidents	HON. SYDNEY FISHER, Ottawa.
	HON. J. S. DUFF, Toronto.
	WM. MCNEIL, London.
President	GEORGE ROBERTSON, Ottawa.
First Vice-President	GEORGE HIGMAN, Ottawa.
Second Vice-President	JOHN A. BELFORD, Ottawa
Secretary-Treasurer	A. P. WESTERVELT, Toronto

DIRECTORS.

WM. GARLAND, Hintonburg.
A. W. E. HELLYER, Ottawa.
F. A. JAMES, Ottawa.
J. E. FIDLER, Brockville.
C. C. CORNISH, Ottawa
R. E. MCKINSTRY, Ottawa.
J. M. PEAKER, Ottawa.

REPRESENTATIVES TO FAIR BOARDS.

Canadian National Exhibition: GEORGE ROBERTSON, Ottawa.
Central Canada Exhibition: JOHN A. BELFORD, Ottawa.
Eastern Ontario Live Stock and Poultry Show: GEORGE ROBERTSON, Ottawa; GEO. HIGMAN, Ottawa; JOHN A. BELFORD, Ottawa; WM. GARLAND, Hintonburg.

R. E. MCKINSTRY, Ottawa, Superintendent.

Moved by Mr. BELFORD, seconded by Mr. JAMES, "That we recommend to the Eastern Ontario Live Stock and Poultry Show that the expenses of our representative to the Canadian National Exhibition be paid." Carried.

The meeting then adjourned.

THE PROVINCIAL WINTER FAIR.

PUBLIC MEETING.

The Public Meeting, held in connection with the Winter Fair, was held in the City Hall, Guelph, on Wednesday, December 10th, 1908, at 7.30 p.m.

The chair was occupied by Hon. Jas. S. Duff, Minister of Agriculture for the Province of Ontario, and an excellent musical programme was arranged for and rendered under the direction of Capt. T. E. Robson, of London.

The Chairman, in calling the meeting to order, said: "Permit me to express the great pleasure it gives me to occupy the chair to-night and to see the magnificient way in which you have turned out to this public meeting. It augurs well for the future success of the agriculturists of the Province of Ontario to see that year after year an increasing interest is being taken in this Winter Fair. If it did not have an influence for good, do you suppose that men and women would continue to attend it? They know it is good for them to come and it is also good for the neighborhood in which they live that they do come. For, notwithstanding what may be done immediately in connection with this Fair or what may be done by the Directors in charge of the splendid exhibits at this Fair or what efforts may be put forth by the Government, if these things are not backed up by individual efforts on the part of the people, they will be of no value. If we are to advance in our agricultural industries, as I am satisfied we shall, from greater to greater things, it will be through individual influence. If there is a people on the face of the earth to-day who should feel proud of their environment it is the people of the Province of Ontario. We occupy a very unique position, being the premier province in the proudest gem in the diadem of Britain. We have within our borders a population of nearly two and three-quarter millions of people. If we are to continue to hold such a proud position in this beautiful Dominion of Canada we must continue from year to year to be true to the responsibilities devolving upon us. We have everything within our own borders to make us great and prosperous and we are only beginning to realize the possibilities of our natural resources. In the northern part of the Province of Ontario there lies a stretch of land that within the next half-century will no doubt be peopled equally as thickly as the southern part of the province. Many of you will be surprised to learn that north of the rocky region where we have the greatest silver camp in the world, away north of Cobalt and beyond the height of land, we have a magnificient clay belt covering between ten and eighteen million acres of land. It might occur to you that this land is too far north, that it is too cold or that it is not the proper sort of soil, but I am convinced, after having been up there a short time ago, that all that beautiful clay belt requires is to have the axe of the woodman take off the forest. When the land is cleared it can very soon be brought into a state of cultivation and the soil and climate are such that this great stretch of country is bound to become one of the best grain growing sections of the Province of Ontario. The demonstration farm which the Government of Ontario has established up there is situated 75 miles farther south than the City of Winnipeg, although it is 475 miles north of Toronto. The country is drained with beautiful rivers and streams and it has everything to make it a beautiful country where magnificient farms may be hewn out of the forest, and as years roll on, instead of taking second place to the north west provinces as some think Ontario will, we will con-

tinue to hold our own and will continue to be the premier province of the Dominion.

I am glad to see this splendid audience assembled here this evening. I shall not take up any more of your time as I am sure you are all anxious to hear the other gentlemen whose names appear on the programme.

I shall now call upon Mr. J. P. Downey, the brilliant representative to to the Ontario Legislature from South Wellington to give the address of welcome.

ADDRESS OF WELCOME.

By J. P. Downey, M.P.P., Guelph.

This is about the seventh or eighth consecutive year that I have appeared in response to the invitation of the chairman of this annual meeting to extend a few words of welcome to the visitors within the gates of the Royal City of Guelph. I do not think it is necessary for me to tell you that you are welcome. I do think, however, if there is one element in connection with this Winter Fair that makes the guests of the City of Guelph realize that they are at home here and that the people desire that they shall make themselves at home, it is the gracious courtesy extended by the King's Daughters. There is an atmosphere of hospitality about that Council Chamber that is refreshing and delightful. I desire to express my thanks, as a citizen, to the King's Daughters for the splendid work they are doing. We all desire to extend our congratulations to the worthy gentleman who to-night occupies the position of chairman, congratulations, not alone because he is here in his official capacity for the first time as Minister of Agriculture, but because he is an old friend. When he was not Minister of Agriculture, when he was simply Mr. J. S. Duff, the member for Simcoe, he always evinced a warm feeling for this Winter Fair and this Royal City of Guelph. In the man who went before him, the Hon. Nelson Monteith, the City of Guelph and the Winter Fair had a good friend and we rejoice that this great exhibition has a true and loyal friend in Hon. Mr. Duff.

Some say Guelph is too small and the Fair should be moved to Toronto. I just want to say this, that just because Guelph is the size it is, that is one great reason why this Fair should continue in Guelph. Here there are no attractions to take the attention of the farmers from the Fair. The educational side of this Fair gives it a dignity and practicability that it would not possess were is situated in any other place.

I desire on behalf of the citizens of Guelph to offer you a hearty welcome. May your stay be profitable and pleasant and when you go away may you carry with you good impressions of our city.

REPLIES TO ADDRESS OF WELCOME.

Lieut.-Col. R. McEwen, Byron, President Winter Fair: Allow me, sir, on behalf of the Directors of the Winter Fair Board to thank Mr. Downey and the representatives of the county and the citizens of Guelph for the very cordial welcome they have extended to us. If the citizens of Guelph will look into the faces of the audience present this evening they will have no doubt as to the fact that their welcome is fully appreciated.

I am very glad to be able to announce to you that our show this year is fully equal to anything that it ever has been, and although we have sent champions to Chicago, the building is full in every department with animals exhibiting the highest skill in the breeder's and feeder's art. We had hoped that at this show we would have had greater accommodation and we would have been able to have included horses. Every person who is engaged in farming is interested in horses and I am sure you will agree with me in saying that this addition ought to be made. We find in coming to Guelph that we get closer in touch with one another and our interests seem to be centered under one roof. Other places may possibly make an effort to secure part of this show, but I hope we may yet see a horse department brought to this fair.

Before taking my seat, I wish to congratulate you, sir, upon your appointment. I am sure every farmer will find in you a friend who will look after their interests.

I thank the citizens of Guelph on behalf of the Winter Fair Board for their welcome.

Wm. Smith, Columbus: I am only going to ask your attention for a moment or two. I feel, Mr. Chairman, as presiding officer of the Ontario Horse Breeders' Association, that I have a right to repeat here to-night what I did this afternoon, and that was to congratulate you upon being called to one of the highest positions in the council of this great Province of Ontario, as Minister of Agriculture, and I hope you will be long spared to preside over this great Department.

Last summer it was thought possible that we would include horses at this Fair, and I must say that if we are going to have any educational features in connection with this show, it must be continued in some town or city like Guelph. If I may be allowed to give you one word of advice, I appeal to you to use your good judgment and secure this show for all time to come. You have had a splendid show in the years past and it should be equally as good in the years to come. Fault has been found in the past with your accommodation, but I am bound to say this, that I do not believe any man, and I do not believe any body of men, or ladies either, can go away from this show and say that every effort has not been made to make them comfortable in every possible way.

ADDRESS.

By W. H. Hoyle, M.P.P., Cannington, Ont.

I assure you that it affords me very great pleasure to be here this evening. This is the first opportunity that has presented itself for me to attend the Provincial Fair in this city. I take it for granted, from the tenor of the musical renditions that we have heard, and also from the speeches, that we may congratulate ourselves that we are all "John Thompson's bairn." As years roll on we are beginning to think less and less of the respective provinces that we hail from. Not that we should forget the provincial interests involved therein, but that our views are broadening and instead of taking a provincial aspect of the affairs of Canada to-day, we are imbued with a national feeling for the building up of this great Dominion of ours, and we love, and honor and revere our public men whether they come from Nova Scotia, from New Brunswick or any of the other provinces.

I am not here as an agriculturist. It is true I represent in the local Legislature an agricultural constituency, and I am identified with all that appertains to agricultural life, not only in the electoral district which I represent, but I believe that it is the abounding duty of each representative in the local Legislature who votes the public revenue, by way of grants to this or that institution, that occasionally he should put in an appearance in order that he might understand and be enabled to vote intelligently on the question of voting moneys that are distributed on behalf of the province in which we take so much pride. With that object in view, I am here, and I propose for a few minutes to take a retrospective view and lead up to a point which I believe will be an additional reason for my being here, because I have every hope and faith that this city will supplement the grant we gave last year of $20,000 to increase the accommodation at this Fair. It would be a fatal mistake for Guelph if she delayed in taking advantage of that grant and failed to, at once, go to work in order to retain and maintain this great agricultural fair within its own borders.

I will take a retrospective view and tell you how it came that the Agricultural College was established in Guelph. In 1870, a long time to look back to, but a very short time in the history of a province, when the Hon. John Carling was Commissioner of Agriculture in the first local Government in the Province of Ontario, he purchased the Mimico Farm, where a model farm for the Province was to be instituted and educational interests built around that farm which he had selected. But in 1871, there came a change of Government and different views prevailed in the House and the whole question of a selection of a site was relegated to a special committee composed of the prominent farmers who were then members of the local Legislature. They sat and they failed to agree as to whether that site purchased by the Hon. John Carling should be utilized or not. When they disagreed the Government of the day called in the aid of two professors from the Michigan Agricultural College, Professors Miles and Kindley. They examined the different sites that were being offered to the Government throughout the Province, and they advised the Government of the day to select the present site on which the Agricultural College is now built and which belongs to the Province of Ontario. Their advice was taken, and the sum of $75,000 was paid for the 500 acres of land. It was then called Morkin Lodge and Mr. Stone who owned that farm had to be ejected by forcible means because he had relented of his bargain and wished to retain his old estate. That was the way in which the Agricultural College was established in Guelph, and the most prominent reason that was assigned why that site should be selected instead of Mimico was this: Mimico was supposed to be in such close proximity to the growing City of Toronto that it would detract from the studies that the students would have to undergo, and if that was a good argument then, it is still a good argument to-day, because this Fair coming to the Royal City of Guelph where the Agricultural College is situated—these associations are doing much good for the building up of the agricultural interests of the Province of Ontario. They are merely satellites revolving around the great educational institution of the Province of Ontario, and I say it would be—shall I use a strong word?—a disgrace to the City of Guelph, if the citizens have not the enterprise to go forward and make use of the Government grant, and see that the necessary accommodation is provided before the next annual meeting of this great Provincial Fair.

I am indebted to the courtesy of the Deputy Minister of Agriculture for some of the data that he so kindly gave me in connection with this matter. From him I learned that from 1873, when this College was established

here, up to 1907, the Province of Ontario had expended on capital account no less a sum than $759,000 in building up our great agricultural and educational institution. One thousand students a year has been the average for several years of those who have gone there for their agricultural education; out of that, 797 of them have obtained diplomas, 268 of that number have taken the four years' course and are now entitled to be known as Bachelors of the Science of Agriculture conferred by the University of Toronto.

Ladies, I know that you will agree with me, that so long as they confine their bachelorhood to the Science of Agriculture well and good, but upon bachelors who desire to remain in single blessedness, it is a consideration in the minds of many of the Legislature whether the time has now arrived to impose an additional tax, in order to keep up the revenue of the Province by way of supplementary revenue. You have heard from the Minister of Agriculture and you will pardon me if I do not indulge in throwing boquets to him because he has already received them from his confreres in the House, and whilst there are many good men in the Legislature, I take this opportunity of publicly saying that upon no one could the honor have fallen more popularly than upon the appointment to the exalted position which he occupies to-night in the Province of Ontario.

He has told us about the sixteen millions of acres of land in the clay belt up yonder in New Ontario. I have also paid a visit to that district. Every word he said in connection therewith is absolutely correct.

There is another condition of affairs in the Province of Ontario to which I propose for a few moments to direct your attention. This Province of Ontario is 1,100 miles in length. It is 700 miles in breadth. It contains 126,000,000 acres of land. How much of these many millions of acres have the people bought from the Crown? Simply 24,000,000 of acres; 80,000,000 acres of land have not yet been surveyed, and to-day no less than 102,000,000 acres is still held in the name of the Crown. That is the condition existing to-day in the Province of Ontario; therefore we have only been playing with the very fringe of this great province. Comparatively, we know nothing of the vast resources that are in store for the future generations who will take our place in due time to conduct the affairs of this great province. I remember about a year ago reading a statement made by Professor Zavitz, that notwithstanding all that 3,000,000 acres of the cleared land is allowed to go to grass, 3,500,000 in addition thereto is held as pasture land, and we are decreasing the acreage annually which is being turned up by the plow at the rate of 100,000 acres per annum. Surely there must be some reason for this problem that has arisen in the agricultural life of the province. I believe its solution will be met through the medium of that educational institution we have located in this vicinity.

After all, the agriculturists of the Province of Ontario are in a very prosperous condition, that is if the statistics of the bureau of industries can be relied upon; because I find that during the past ten years the farmers, including their land, buildings, their implements and live stock are worth to-day, collectively, two hundred and seventy-four millions of dollars more than they were ten years ago. That is a great increase in ten years in the value of the agricultural industry of this province, and in addition to that you have enjoyed prosperity; because at last a home market has really come into existence. I do not purpose to-night to traverse for one moment any political issue. I am not going to indulge in tariffs, because the two great political parties in the Dominion of Canada are practically committed to the principle of protection, and side by side with the growth of agriculture we have our manufacturing industries, and the day is past when any jealousy should be

allowed to exist between the agriculturist and the manufacturer of this great province.

The manufacturing interests have no less than eight hundred and sixty-four million dollars invested in the manufacturing life of the Province. They give employment to nearly four hundred thousand artisans. They spend one hundred and sixty-five million dollars in salaries and wages, and to a considerable extent that has been one of the factors that has created the home market. It has increased the cost of living by twenty-five per cent. in the Province of Ontario, and, for all I know, throughout the length and breadth of the Dominion, and consequently, the farmer, to that extent, has received a higher price for the produce of the farm, and I hope and trust this national view of the question will receive the consideration to which it is entitled.

There is another issue growing rapidly which we call the "Industrial Problem." There is an old adage, and a true one, that "when a man ceases to dream the gods die." That is just as true to-day as it ever was. Put in other language, when men cease to occupy their mental thoughts and casting à glorious horoscope over the vision of this great country, then the spirit of decadence will have settled into the national life of the Dominion of Canada. We have to-day social conditions arising in this country, because they cannot exist long in the mother land before they find their way over to this country. You see in the mother land, the condition of affairs to-day which we call the socialistic idea, and that movement has received a large amount of sympathy from the Christian Church and is finding its way into this country, and there are a variety of reasons and a variety of remedies offered to the public in order that the people may resume the national control of their franchises through some great economic law that has not yet, mark you, been annunciated.

I remember reading, a few years ago, an excellent essay, by a member of the Toronto Press Association. I think his name was Mr. Cross. He says in order to meet the condition of affairs and to find a solution of the industrial problem, it will be necessary to recast the politics of the country, and that it will also be necessary to find some harmony between socialism and individualism, and if the people are going to assume the national control of their industries, it must be entirely by a principle that will commend itself to the highest degree of human liberty. These were some of the views that were outlined, and they are well worth thinking about.

The agricultural industry is said to be liable to attack from another quarter, owing to the rapidity with which science grows, and one able scientific man has said that this industrial problem is not going to be solved by legislation, but in the laboratory. It is not going to be solved by politicians, but by chemists, for he says the chemists are already in possession of this fact; that all the elements of food which go to sustain human life are existing potentially in the atmosphere, and that the chemist will extract them from the atmosphere far easier than you gentlemen can extract them from the earth, or the plant, or the soil, and then Paradise will be regained. No more work, but a continual feast of good things and intellectual repose. We shall all be able to solve the riddle of existence and I know you would like to be living in such days.

ADDRESS.

By G. C. Creelman, B.S.A., M.S., President Ontario Agricultural College, Guelph.

It gives me the greatest possible pleasure to be present with such a large audience of people from country places. It has given me pleasure to sit and listen to the eloquent addresses that we have had to-night.

I feel very much indebted to those who, in arranging this part of the program, included me in the list. It has been my privilege during the last five years as head of the Agricultural College to go from place to place, from school section to school section of this splendid province of ours, and I would have been dull and my eyes would have been closed had I not seen many things that might be improved, and I am going to take this opportunity of saying one or two things that might be of benefit in improving the education of our boys and girls in country schools.

The boys of this country, living upon farms, when they get to maturity and take their places side by side with their fathers on that farm, are not any better prepared for their life's work than the hired man who works alongside of him and that is a deplorable thing; and the young girls in the farm homes educated in the ordinary country school at the present time, when they grow up to young womanhood, are not in as good a position to take their places as wives and mothers as were their own mothers. They are not as well prepared in domestic duties as their mothers were. After all these years of so-called progress and prosperity in this country of ours, I am sorry to have to say this is true in most of the agricultural communities of the Province of Ontario.

I am going to qualify my remarks or I would leave a very bad taste in your mouths. But what I am prepared to prove is this, that while our public schools and high schools and universities have been most excellently administered, yet the children in the agricultural homes of this country are not as well prepared to battle against life as were the boys and girls who worked side by side with father and mother and were educated by the brainy men who came out from the Old Land and taught in those early days. It is not long since I attended a country school myself and I know when I came to the Agricultural College I could not have named twenty trees to save my life, and I was brought up in the bush, and I have tried the experiment with a good many country boys that come to the College and there is not one in a dozen can do it, and there is not twenty men in this audience who can do it. If you think you can, take out your pencils and start, and after you get past oak and elm and maple and ash you have to stop and think. When I tell you there twelve varieties of maples alone in Canada, you can easily understand that when public schools are taught by sixteen year old girls, they are not in a position to give boys of the farm the proper education to fit them for their life's work. There were things I did learn in that country school that were drummed into me day after day, that I have not forgotten and never will forget, and which I think will never be any use to me in God's world. I can start up in the north-east corner of Europe and name the rivers: Petchora, Dewina, Orega, Neva, Vistula, Oder, Elbe, Rhine, Seine, Loire, Goronne, Douro, Gaudiana, Gaudilquiver, Ebro, Rhone, Po, Tiber, Danube, Dniester, Dnieper, Don, Tagus, Volga, Ural. I was taught that a relative pronoun, or more properly a conjunctive pronoun, was one which in addition to being a substitute for the person or thing, connects the clause with the antecedent which it is intended to qualify or modify. I know the mountains

of Asia and I wish I did not. I know the capes of North America; I know all the tributaries of all the great rivers in the world. I can say them just as well as I can my A B C's. Every teacher coming in fresh made a new start and we had to go over them again and we did not give it away for fear we would get something harder and we went over the same thing over and over again. I ask you trustees to give this your serious thought and consideration and see if something cannot be done to give your boys, when their time is not worth very much, an opportunity to learn things he loves to learn, things that a boy will stay after four o'clock to learn. At our Consolidated School they come back in the holidays to look after their school garden.

I have a son attending the Macdonald Consolidated School and he came to me one day last fall just after the Guelph exhibition and he said, "Father, I won five dollars yesterday," and I said, "You did? How did you do that?" He said, "It was the easiest thing you ever saw in all your life. There were forty-two of us entered into a competition and I was fortunate enough to win." I asked him what he had to do and he said, "Not very much, there was a barrel of apples of all kinds and they turned it out on the grass and all we had to do was to name the different kinds of apples and tell whether they were summer or fall apples." I asked him had he anything else to do. "Yes, they had a collection of common insects, those little six-footed animals that prey upon our fruit trees and cabbage patches and bean fields and the oats and rye." I asked him what he had to do with them and he said, "Pick them out and name them and tell whether they were injurious." And I said "Were you able to do that?" And he said "Yes, they were just the ordinary insects that are around here." And I said, "Had you anything else to do?" And he said "Yes, we had to name the different kinds of birds and tell whether they were injurious on the farm or whether they were beneficial." And I said, "Could you do that?" He said, "Yes, sometimes we get up at five in the morning to listen to the birds and learn their different calls, so that we can recognize a bird and know whether that was a bird to go after or leave alone." And I said, "You have an education now, that whether you become a lawyer or a doctor or any other kind of a good citizen, you will have a good start in life that will give you an interest in life's work for all the rest of your days if you never go any further, and you are only thirteen years of age." And I say it would pay you farmers whether you are bachelors or not, whether you own land in the place where you reside or in the next school section as well, it would pay you to say to the people, "I am willing to put up 10, 15 or 25 per cent. more taxes for this school section in order to get a man who can teach my boy or my neighbor's boy just that sort of thing, so that when he becomes a man he will be able to do something besides hoe the weeds and draw the water.

There is not a woman in this Province, in city or country place, but has to do three times a day, their cooking or sewing or laundry work in some capacity and not five per cent. of the people in this Province keep servants. 95 or 96 per cent. do their own work with the assistance of their daughters or sisters or mothers, and yet we have no system in the Ontario public schools in the country places, whereby that girl learns one thing of any one of those three things she has got to do every week all the rest of her life. There is no reason why, with an equipment that would not cost $50, every little girl who is a little mother in herself and who has home making instincts in her from the time she takes up her doll, should not be taught the cooking of simple dishes and the simple washing of clothes.

I think we should have this means of education for our boys and girls. We are just at the beginning of agricultural science, and while Ontario is

held up before the world as a leader in agriculture, and while the Ontario Agricultural College has within its doors, boys from twenty-two different countries in the world, representing every province in the Dominion and every continent in the world, yet we are just on the edge of things, and if the children of this country get the kind of instruction I am telling you about, we will be in a position to keep up with the farmers in other countries.

One movement is taking place at the present time of which I wish to give you a hint, and that is, instead of depending on the Agricultural College which is only one institution, and can only accommodate one per cent. of the eligible farmers' boys between the ages of 16 and 22 and the other 99 per cent. must go without the kind of instruction we are able to give them. In order to reach the other 99 per cent. we are trying an experiment now of placing our graduates in some of the counties to instruct the farmers. You say, "What can that boy do for us on the farm?" True, he cannot do very much at first, but he will do much as days go by.

If you have a new weed on your farm, you say "I will pick that and send a sample to the Agricultural College, but you have not the envelope and paper handy and you forget to do it and the next day your wife sweeps it out. But where you have one of these young men in your county town, you can take it right in to him and he can tell you all about it. How many times have you seen an insect you never saw before and you do not know whether this is going to do harm or good. This young man will be able to help you greatly in this respect and in many other ways that I could not take time to enumerate.

It is only because these things are close to my heart that I speak to you in this way, and I trust that the farmers of Ontario, ten or fifteen years from now, will be just as much ahead of other countries in agriculture as they are in the year 1908.

LECTURES ON PRACTICAL SUBJECTS, DELIVERED IN THE LECTURE ROOM IN THE WINTER FAIR BUILDING, GUELPH.

FATTENING CHICKENS AND DEMONSTRATION IN TRUSSING.

By Miss Mary Yates, McDonald Institute, Guelph.

Perhaps that which I have to say may not apply to the birds that are being shown here, but what I have seen in other parts of the Province does not compare favourably with table poultry in the old land. We have been very delighted in England with the beautiful eggs you have sent over, but I am sorry to say we have not been so satisfied with your poultry, and my topic to-night is more especially the fattening of chickens for market.

It may be that your temperamental and climatic conditions are somewhat different to ours in Europe. I think Canadians on the whole seem to be a little thinner than John Bull, and as a people you may be said to resemble the active laying races of poultry rather than those plump soft varieties that are the best for fattening purposes. It may be that you do not take so kindly to feeding here as we do in the Old Country, and it may be that our

birds resemble us. Many people over here seem to be troubled with indigestion and nerve troubles, and if the poultry follows your example you will never be able to turn out the best plump, tender, fat chickens as juicy tempting morsels for the epicure.

There may be other difficulties present in this country of which I am unaware. Good feeders seem almost to be born and not to be made, and those who are interested in the feeding of beef cattle will support me in this.

Some women appear incapable of knowing when their husbands even are enjoying their food, and such women should never undertake to feed poultry with any degree of success. The man or woman who does not study the little details, and give careful consideration to the satisfaction of the birds, will never be able to produce the best results.

It is essential to have the right breed to begin with. There are four main groups into which all races of poultry may be divided. First come the laying or non-sitting varieties, and it is practically hopeless to feed these for table use. The well-known table races, as we understand them in Europe come next, and are totally different in conformation and character. Thirdly, the General Purpose fowls form an important group to themselves and may be said to do moderately well in both these respects, but only moderately well, they supply what may be called a third-rate market and could never be made to do duty for a first-class customer. Then lastly there are the ornamental races which should never be seen on the farms at all. For a few minutes let me draw your attention to the names of some of these varieties.

Economical Classification Of The Races Of Poultry.

1. Laying or non-sitting varieties

- Dutch
  - Hamburg
  - Red Cap
  - Campine
- Mediterranean
  - Brackel
  - Minorca
  - Black Spanish
  - Andalusian
  - Leghorn
  - Ancona
  - Scotch Gray

2. Table Breeds

- Dorking
- Indian Game
- Old English Game
- Modern Game
- First class French races
  - La Bresse
  - La Fleche
  - Creve Coeur
  - Dumans
  - Courte Pattes
- Flaverolles—Second class, French
- Coucou de malines—Belgian
- Orloff—Russian

The Dorkings we almost regard as an ideal type. Shape and confirmation is very important. There ought to be quantities of well-flavored tender flesh on the breast, not on the thigh and the legs, where we find it in such birds as the Rock and other general purpose races. The French, as you know, may be said to produce the best table poultry in the world, but I do not for a moment suggest that you should try to use here the delicate varieties that are valuable in Southern Europe. I merely want to point your attention to the fact that no poultry is ever seen here that can even begin to compare with the table delicacies that are produced from these races, and it is well to bear this in mind when desiring high prices for export trade. I can assure you that it is not an uncommon thing for the French poultry keeper and for the French farmer's wife to realize $5 each for the birds produced from these races, especially fed and fattened as they are for the tables of the Princess. Probably they could not be brought to first-class maturity here, but it will show you the sort of thing the exporters are up against as compared to our poultry markets here. The high-class market of the Old World is

patronized by royalty and nobility, together with the critical merchant princes, and these people are willing to give very high prices for the best. It is no use thinking that the sweepings from the fanciers hands, or the culls from the laying stock, can be marketed as high-class table birds. This trade simply cannot be captured without specialization.

The Flaverolle, which is used in France to supply the second-class market, has all the hardiness of the Rhode Island Red with the breast of the English Dorking, and it is the variety to be recommended for better class market here. I can get Flaverolles ready for the market in a shorter time and at cheaper cost than any other variety I have ever tried, and can recommend them to those of you who may think of attempting to produce excellent table fowl for the best customers. For wholesale work, if several poultry keepers in a neighborhood would take up the same variety, and market them together, it would attract a better class of buyers who can only place orders where there are large supplies to be obtained. From the little experience I have had of your markets in this country, I know there is a great and growing demand springing up in the cities and towns of this Province for a better class of poultry, and something ought to be done to supply it without running the risk of importation from other countries.

I have been asked to speak to-night especially on fattening poultry, therefore I take it that I may leave out of the question anything that pertains to the raising of the chickens. Feed generously from the first however, and give less exercise. If you are specializing spend all your energies from the beginning upon gaining the object in view. We have received as much as $1 apiece for broilers that were sold in Toronto the first week in May. You will remember that this is the time at which the Horse Show is held, the races are approaching. The thinking men and women of the community should be able to put two and two together and realize that in connection with large social gatherings of that nature, numbers of entertainments are given by people who want the best to be had, and therefore it is a business-like time to have your poultry delicacies ready to put upon the market. The banquets and parties that are being given at that time require large supplies of broilers. The weight of the birds should be from 2½ to 3¼ lbs. a pair, and that 3¼ pounds must not be made up of skin and bone; it must contain a quantity of delicate breast meat. For the spring trade fattening in any serious way is unnecessary, but when it comes to later work, the birds to be finished as economically as possible should be crate fed, and properly fattened. Personally I have always found the best results from the adoption of the French method;—that is, the use of sour skim milk and meal. Sour milk is necessary to keep the birds in health if no vegetables are to be used, and there is considerable difficulty in keeping up the supply of these of a sufficiently succulent nature. Mix the meal and the milk together in the proportion of a quart of meal to one quart of sour milk and let the mixture stand twenty-four hours to cream, as it is called. The feeders should know the proper consistency—what the birds like best and what they relish most. The meal that gives the very best results in the Old Country is ground oats, hulls and kernels ground finely together, but it cannot be obtained here. A fair substitute may be made from a mixture of corn meal, two parts to one part of shorts, and one part of low grade flour. It is well to add fat to the milk. It is to be supposed that skimmed or separated milk will be used, therefore when possible add ¾ of a pound of fat to a gallon of milk, raising it gradually to a pound as the fattening period advances. If feeding for show it is well to make an effort to obtain some succulent vegetables as well.

Q.—Do you advocate not using vegetables?

A.—You do not need the vegetables if you have sour milk. To use lettuce is admirable, but cabbage will give good results.

Q.—Is butter milk as good as skimmed milk?

A.—In Ireland they use butter milk a great deal. I have not handled it myself, but I have seen extremely good results from it in many places.

Q.—Do you use any salt?

A.—No, never use any salt.

Q.—Should the milk be thick?

A.—Yes; certainly. In France they are in the habit of buying the milk in large quantities at the time of year when it may be bought cheaply, and then it is stored in pits in the ground and is dug out as required.

Q.—What do you use to replace the butter fat?

A.—Any kind of fat that is available, mutton fat has given me the best results.

Q.—How is tallow?

A.—Mutton tallow has given me extremely good results.

Q.—How do you use the fat?

A.—Either render it (that is melt it in the milk) or put it through a cutting machine; but this is only advised for those going into the work in a large way. If it is mixed in large lumps the greedier birds will get it all. The food however is of comparatively little importance in comparison with the conditions under which the food is given, and that is the essential point I want to drive home. They must be quiet. A sleepy condition must be induced in the birds. Strangers must be kept away from them. Dogs excite them. The fattening stock must be kept apart. Try as far as possible to have them disturbed only twice in the day to feed. See that all the attention is given to them at those times only. Two good feeds will give you far better results than three feeds each day. Let all the cleaning be done at those hours, and any birds taken out then that are ready for killing. it has been my practice never to allow visitors to go around the fattening sheds at all. Nothing is more tiresome than the curiosity, laughing, and chattering of visitors going around and the barking of dogs, or children raising a disturbance. It means, too, the losing of a day or two's feed. Keep their appetites as keen as you can, and this is where intelligent feeding is shown. Even a teaspoonful of feed too much during the latter stages will ruin the chances of a high class bird. I have never seen any poultry shown in this country that could begin to be mentioned in the same day with the poultry to be seen exhibited at the Dairy Show in the Agricultural Hall, London, England in the fall, or at the Fat Stock Show at Smithfield just before Christmas. It has been one of my greatest pleasures to take prizes at these shows and at some of the other leading table poultry shows in the country.

Now comes the question of length of time to feed. Two or three weeks will give a sufficiently good bird for private customers, but when it comes to the showing you must exercise your ingenuity to keep them going for two or three months, and even one teaspoonful too much will spoil all your chances, and the bird will have to be turned out of the crates and allowed to recover on grass. It has been said that women cannot undertake these matters. Let me tell you that in France one of the biggest fattening establishments (where they keep on hand 4,000 birds in cages) is managed entirely by women; and where women will study the feeding of their husbands and families they haven't any difficulty in feeding chickens. Where they like their family to be well fed and enjoy their food, they will be able to turn out high class birds. The last prize I won before leaving England was at

the Royal Hants Agricultural Societies' Show, first prize for the best pair of cockerels. I won with Flaverolles, and I beat a man who, I think, will never forgive me, and he made the statement that "women should keep out of such work." I mention this just to encourage those who are thinking of taking up table poultry on their own farms. There is no difficulty whatever about it. In England we use the craming machine very largely, and we feed ten days from the trough, and then we cram ten days. Where you are not using a cramming machine it is well to feed very sparingly at first, just as much as the birds will eat greedily, and then follow later on with as much as they will take. One of the secrets of success is to fast the birds twenty-four hours at least before they are put on this feed. Start them off on the keenest appetite and then all will go well; start them off in a half hearted way and you will have lost your chances from the beginning. If the birds to be finished off have been collected from some distance it is advisable to give them a week's feeding in the open before they are caged, as the shock of the journey upsets them. After that feed sparingly for a week.

Highly fed birds should be killed and trussed where they are fed. They should never be marketed alive.

Your attention should be drawn to a difficulty that shippers are having with Canadian poultry just now. Birds should never be shipped with their crops full of food. High class prices cannot be obtained if you market birds with a crop full of undigested food. The flesh of such birds is unlikely to be wholesome. I am told that there is a law forbidding this, and yet one sees birds exposed for sale continually in an absolutely disgraceful condition with their alimentary tracts full of decomposing material. I have even been given birds for demonstration purposes by local poultrymen that have not been fit for human food. Toxins are produced by the partially digested materials which effects the condition of the flesh and renders it undesirable for human beings to eat. A bird should be fasted for from 36 to 40 hours before being killed in summer time, and at least 24 hours should always be allowed in winter. It is highly advisable that birds should be dry picked and packed in a cool place. Complaints are made by poultrymen who state they cannot ship poultry because the cars are not in proper condition. The trouble really begins when the birds are not fasted before killing and then are packed in a warm place.

Q.—How do you kill and pick fowl?

A.—We kill by breaking the neck.

Q.—Don't you bleed them?

A.—They are bled, but not as you generally understand the term. I will take one of these birds and show you exactly how I do it myself.

Q.—The general complaint is that the fowls are hard to pick without scalding them?

A.—They may be a little harder, but if you kill and pluck right away there is no difficulty. I understand that some of these birds have been killed by bleeding at the roof of the mouth. That is considered a very admirable method in France, but I am not satisfied that it is the most humane way, unless the construction of the brain is understood. A week or two ago in Aylmer I made that statement, and a doctor happened to be present in the room, who said that an ordinary individual could not cause instantaneous death by this method, because the knife should penetrate a certain part of the brain. I have never been fully satisfied that the bird is absolutely killed at once in this way by the ordinary poultry man. The knife they use in France is made for the purpose. It is curved. A part of the brain

hat must be reached is situated where it is not possible to reach it with a traight knife. The method of killing I have adopted is by breaking the neck y a sharp downward and backward jerk. If you stand firm on the left oot with the right foot slightly advanced and draw against your knee you ill do away with the common mistake of a twitch, which will break the ead right off. You make the break in the neck just behind the head leaving space that enables all the blood of the bird to run down and form a clot iere.

Miss Yates then dressed and trussed a bird in a very rapid and perfect anner, for which she was loudly applauded by the audience.

WHEN AND HOW TO HATCH.

By L. H. Baldwin, Toronto.

As chairman I will make my remarks short and allow more time for the her speakers. My subject is "When and How to Hatch." I think it is a ery important question and one that lies at the bottom of much disappointent; especially with farmers, in the financial returns they expect to get and o not get from their poultry. You all know that in sowing your seed crop is important to know when and how to sow. If you delay your seeding have not the seed bed in proper condition you have a crop that is difficult to keep free of weeds. On the other hand if you are careful to make a ood seed bed and sow your seed in good time so that it will receive the freshing spring rains and get good vigorous growth the result is that you ill have a crop that gives you a good handsome profit. I am perfectly rtain that this is also true with regard to poultry. How many farmers tempt to hatch their poultry at the proper time? They put it off until they e through with their other work and do not try to get their hatching one before the heavy work of the spring commences. A good many farers say they cannot get hens broody early enough to hatch their chicks. hat is true to a large extent just because the previous year they were late setting their eggs. If you will make an effort in one year to get a broody n from your neighbor if you haven't one yourself, and if your chickens atch early so that they will commence laying early in November or October, ey will naturally become broody earlier in the spring, and you will have em on hand to hatch your eggs early the following year. That is the ief point to make to the audience to-night. How you should hatch pends a good deal on your surroundings. I would like to have taken a tle time to have illustrated this but I will not do so to-night.

Q.—Would not an incubator get over that?

A.—I was going to say there are two methods,—the natural method d the artificial. I think the farmers might make use of incubators to larger extent than they do. I am quite free to admit that we have had eat difficulty in artificial incubation, but still I see no reason why farmers ould not use them more than they do. The one point I want to make is urge the farmer to see that the chickens are hatched earlier than ordinily is the case, and to bring that point home to you is all I will attempt do to-night.

THE PASTEURIZING OF WHEY.

By Frank Herns, Chief Dairy Instructor for Western Ontario, London.

The question of heating or pasteurizing whey returned from cheese factories has been given some attention in an irregular way for many years. It was tried more or less successfully by a few factory managers at different times. There is no claim made by those who have lately taken up the matter that the idea is new or that they have made any new discovery. Bacteriologists advised this system of dealing with whey long ago, particularly where bitter flavors developed in the curds. What is claimed, however, is that two years close attention and experiment with 58 cheese factories has warranted the assertion, and goes far to prove that proper and systematic pasteurization of whey before it is returned to the patron is a step towards securing a better milk supply at our cheese factories, and a means when properly done of increasing the feeding value of the whey and doing away to some extent at least with the evils of unclean, ill-smelling whey tanks, and bitter and yeasty flavors. It is no doubt true that it would be far better for the cheese industry if no whey was returned in the cans, and this system has been repeatedly advocated by dairy authorities and others who know the evils of returning whey in cans; but unfortunately patrons do not always follow good advice. We find therefore that practical conditions bring us face to face with the fact that in Western Ontario at least the majority of factories return the whey, and so far there has not been offered any more practical method of returning this whey than in the same cans in which the milk is delivered. For many years this whey and whey tank question has been one of the problems difficult to deal with. Admitted by nearly every one in the trade that returning whey in cans from the ordinary whey tanks and under conditions that has prevailed for twenty years or longer was a distinct means of injuring the flavor and quality of the cheese, yet no real practical solution of the difficulty has been offered other than appeals to the maker and patrons for more sanitary conditions which have had a marked effect. During the past four or five years a great improvement has been brought about through dairy instruction and public opinion in the conditions of the whey tanks, yet we are still a long way from perfection, and many tanks are still sadly neglected and kept in bad condition, in fact there are still a few tanks that are not cleaned during the season, in defence of which neglect the very doubtful argument is put forth that the more filthy the whey tanks become the more likely are the patrons to pay particular attention to cleaning the cans. I think factory managers sometimes underestimate the influence of clean whey tanks on the attitude patrons take in caring for milk.

We have been looking forward to the time and I hope and trust it will come when human nature will be changed to such an extent, and such up-to-date methods followed, that no careless cheese maker or patron will be known. Then will the evils of bacteria-laden whey, unclean whey tanks and improperly cared for milk disappear and then no doubt pasteurization of factory by-products will be unnecessary; but in the meantime what? Depend on the slow process of education and perhaps compulsion to remedy the evil of unclean whey tanks, when for a small cost to each patron a partial remedy at least may be provided and conditions improved so far as the whey is concerned right now, not ten years from now. In dealing with this matter I went straight to the men who produce the milk and the women on the farm who usually have to wash the cans, who to my mind are in the

best position to know the exact condition in which the whey has been coming home from the factories for many years past. I sent out 1,500 letters to patrons of 23 factories where the whey was being pasteurized for the first time, dealing with the claimed improvements of the whey, asking some twenty questions relative to these improvements, and out of the several hundred answers received the opinion was almost unanimous that pasteurization of the whey was a distinct improvement, and they expressed their willingness to pay their share of the cost to continue this system at their respective factories. I do not think the opinion of these patrons should be ignored, and I believe they know what they are talking about. The makers say the milk comes in better condition and some of the cheese buyers claim the quality of the cheese improved in flavor.

A Few Reasons for Pasteurizing the Whey.

Let us look at a few reasons for continuing and extending this system. The fact is well known that the germs which produce certain flavors develop very readily in ordinary sour whey, and that these germs are readily conveyed through the medium of the whey in the patrons' cans. These germs find a breeding ground in the crevices of the can and are very difficult to dislodge; they rapidly develop in the milk when brought in contact, and produce yeasty, bitter and other putrefactive flavors. It is not practical to pasteurize the milk for cheese making, consequently to prevent as much as possible the contamination of the cans we resort to pasteurization of the whey. A whey tank may be cleaned every day, but unless the tank is sterilized with live steam it is not clean from a bacteriological stand-point. The wood being porous allows the sour whey to penetrate and with it many injurious bacteria. Steel whey tanks are very much to be preferred on this account. Whey unpasteurized from ordinary whey tanks goes into the cans with an acidity of from one to 1.7 per cent., depending on the cleanliness of the tank. The average acidity is about 1.15 per cent. This means very sour whey, the sugar of which is nearly all changed to lactic acid, which readily affects the tin of the can. I have failed to meet the patron who would rather feed or have in his can old sour ill-smelling whey in preference to sweet whey. The average acidity of the whey going into the patron's can where properly pasteurized was .4 per cent. about three times as sweet as when not pasteurized. Some factories were able to return the whey with an acidity not greater than .25 per cent.

There is a small mechanical loss of fat in the whey in the process of cheesemaking, even under the best conditions;—less when the milk is in good condition, more when not. By all means let us endeavor to have the milk sent in such good condition that this loss will be the least possible. The average loss in the whey for the factories of Western Ontario this year was .23 per cent. Now, I am not prepared to say what this fat is worth for feeding purposes, but if it is worth anything let us see how much of the fat the patron really gets under ordinary conditions. The average per cent. of fat in the whey going into the patrons cans where not pasteurized this year was .09 per cent. or, less than one-tenth per cent., in some cases as low as .03 per cent. Where does the remainder of it go? It floats on the top of the whey in the tanks and when the tanks are not cleaned regularly becomes a mass of decomposing floating material which is a nuisance to the cheesemaker; in fact, is given as an excuse by him after it has accumulated for not cleaning the tank. He says he does not know what to do with it, and it is certainly almost a total loss to the patron except when the whey

gets short some morning, and his can gets a deluge of this stuff which I defy anyone to get out of the can and clean it properly with the ordinary facilities at hand at the average farm house. It seems somewhat inconsistent to ask patrons to improve in the methods of caring for milk, and then persist in putting into their cans this old, sour, foul-smelling, gravity skimmed whey, and leave them to believe that this system of handling whey is the best that can be devised until more up-to-date methods are adopted by them in the care of the milk. On the other hand we find that where a proper system of pasteurization has been introduced the average per cent. of fat in the whey as it is returned is .22 per cent. or practically the same as when it came off the curd. This fat is evenly distributed through the whey, is liquid, is easily passed from the can with the whey, and does not interfere with easy and proper washing. If this fat is worth anything for feeding you will notice there is two and one-half times as much fat returned in pasteurized whey compared with unpasteurized, in the latter the fat is left in the whey tanks, in the majority of cases. When whey flavors develop in some of our cheese, does it not look reasonable to suppose that such flavors may be induced by returning unclean whey in the cans, in fact this is one of the strong arguments put forth for many years by those who are opposed to returning whey, that such a system gave the cheese a whey flavor. We may rest assured that human nature will always creep in, and some patrons will fail occasionally to entirely get rid of injurious bacteria from the cans. It is therefore reasonable to suggest that all patrons be put on the same footing, so far as the whey question is concerned, and send them home sweet, germ-free whey *so far as possible*, and then look after the careless ones and see that they take proper care of the milk and cans. The question of tuberculosis might also be mentioned in this connection, since it is claimed that it is quite possible for bovine tuberculosis to be carried through the medium of the whey, and infection of the hogs or other animals to which it may be fed take place. If this be true, then it become another strong reason for proper pasteurization of all by-products from the cheese factory and creamery.

Advantages.

Whey properly pasteurized should go into the patron's cans from the whey tank, provided the tanks are kept clean, with an average acidity of not more than .3 per cent., and an average fat of about .2 per cent., while unpasteurized whey will have an acidity of from .9 to 1.7 per cent., average about 1.15 per cent., and a fat as low as .03, average about .09 per cent. The sugar is not converted into lactic acid and the fat must be worth more for feeding in the pasteurized whey.

The chances of contaminating the cans are much less, and when certain bacteria which appear to grow rapidly in sour whey are present, the proper heating of the whey will check their growth and prevent their spread in the patron's cans.

Yeasty or bitter flavor may be developed in the milk of one or more patrons from unsanitary conditions at the farm, but heating the whey will prevent the infection of other patrons cans, and the bacteria from being seeded at each farm. Consequently the patron who is guilty of sending yeast infected milk may easily be detected by the curd test and dealt with accordingly. The cans are very much easier to wash where the whey is pasteurized. It is absolutely necessary that the cans be sterilized or scalded with

boiling water whether the whey is pasteurized or not. This should leave the cans sweet and clean without that disagreeable old sour whey flavor so hard to remove from cans which contain whey from tanks where it is not heated, or kept clean. Prevents to some extent at least the tin from being taken off the can, since less acid is present therefore the cans should last longer, the saving in cans alone should be considerable. Lessens the chances of over ripe milk during hot weather.

Pasteurization keeps the whey tanks at the factory in a condition that they can be readily and easily kept clean, no fat floating on top of the whey, and leaves no excuse for not keeping them clean. The temperature of 155 degrees to which the whey is heated must have in the time before it cools an influence in freeing the tanks and the whey from bacterial life.

Precautions.

Pasteurization should begin as soon as possible after the whey reaches the tank to prevent the development of acid and to take advantage of the temperature of 98 degrees before it begins to cool. Care must be taken that the temperature does not rise above 160 degrees. A higher temperature will precipitate the albumen and cause the whey to be flocculent and slimy. A temperature less than 150 degrees is too low, as the growth of bacteria is not prevented to a sufficient extent.

Small or large quantities of whey should not be left over in the tank from day to day, as this whey will eventually become sour and act as a culture in the new whey, rapidily raising the acidity and nullifying to a great extent the work of pasteurization.

The boiler must be large enough to furnish economically the steam required. Inexpensive results cannot be obtained otherwise. The tanks should be as close to the boiler as possible and the pipes insulated to prevent condensation and waste of steam before it reaches the whey.

If live steam is used, pressure as high as practical should be carried, and the steam not given too much vent into the tanks or the boiler will rapidly be emptied of water. Heat under steam pressure by keeping the live steam going gradually into the whey as fast as it is generated by the fuel. Beginning with good steam pressure less water will pass over into the whey.

It is not wise to attempt to pasteurize unless it can be done properly. It will be a waste of steam, and the results will be disappointing. Pasteurization of whey is for the purpose of getting an even distribution of the fat, and getting rid of the evils of unclean, sour whey, and not a panacea for the evils of improperly cared for milk.

Cost.

The cost will be according to the condition under which the work has to be done, such as size of boiler, location of tanks, whether the exhaust steam from the engine can be utilized, the system followed and experience. It will range from 50 cents to $1 per ton of cheese. Several tests made this year with live steam direct from the boiler under good conditions allowing $4 per ton for coal, place the cost at 64 cents per ton of cheese. The patrons get practically all the benefits from pasteurization, therefore should pay each their share of the cost.

Different Systems of Heating.

The whey has to be raised from a temperature of 98 degrees to 150 or 155 degrees or about 52 to 57 degrees.

1st. Turn the live steam from the boiler under 60 to 80 pounds pressure directly into the whey, distributing through a simple system of three-quarter inch pipes to get an even temperature, and most economical use of the steam, this is the most effective system, and does the work satisfactorily, but it is no doubt the most expensive.

2nd. Turn the exhaust steam from the engine into the tanks, and add sufficient live steam to raise the whey to the required temperature. This system is less expensive where practical, perhaps not quite so effective, as it may take longer to heat.

3rd. Turn the exhaust steam from the engine into the pipe leading from the pump or ejector to the upper tank, placing the connection several feet above the pump, turning a small pipe inside the large pump pipe a foot or so long in the direction which the whey is travelling. Add sufficient live steam to get the required temperature. This is still cheaper, but some little difficulty may be found in regulating the temperature at first.

4th. Raise the whey from the lower tank to the upper with an ejector, add sufficient live steam in the upper tank to finish the heating. The ejector, if large enough, will increase the temperature about 20 degrees while the whey is passing through.

5th. Heat the whey in the lower tank with the exhaust steam from the engine to a temperature of 135 degrees, then raise with an ejector to the upper tanks, when it will be found at about 155 degrees, the ejector having supplied the extra 20 degrees.

Any small quantities of whey left in the lower tank should also be heated at all times.

6th. Use a special heater, a devise consisting of a pipe two feet long six inches in diameter, capped at both ends. The cap drilled and threaded to allow pump and exhaust steam and overflow connections. Set heater upright. Connect exhaust steam at the bottom. Connect whey pipe at the top, also overflow pipe. Whey is heated before it passes out through overflow pipe. If exhaust steam is not sufficient, add some live steam. May have to be disconnected and cleaned occasionally. Cost about $6 to make. This special heater has been found very economical for pasteurizing skim milk, should work equally as well for whey.

THE FEEDING VALUE OF PASTEURIZED WHEY.

By W. C. Shearer, Bright.

I think before I explain the farmer's side of it I will just explain how we manage it at the Bright cheese factory. We have been pasteurizing the whey for two years. Our boiler is situated near the cement whey tank; we have two pipes into the tank. I think it cost about $12.50 to connect the pipes in this way. As soon as the whey is run in, or during the time it is coming in, the exhaust steam is coming in to bring it up a few degrees. It comes from the vat at about 98 to 102 degrees, and we do not want to lose any of that heat. When the whey is all in the vat, the cheesemaker is done with the engine on the vat, and he lets in the live steam and hangs a ther-

mometer in the whey, and when it comes to 150 or 155 degrees then he shuts off the steam, shuts up the door and keeps in the heat, and it lies there from three in the afternoon till the next morning, and then he sets the pump going and elevates it to the other tank, where it is distributed to the milk wagon.

We pay a man 50 cents every morning to keep the farmers from quarreling because they all want a lot of whey. He gets there at 7 o'clock and he is there to half-past ten every morning.

Q.—How do you put the whey into the cans?

A.—With a rubber hose about 3½inches in diameter.

Q.—Do you measure your whey in the cans?

A.—He has no means of weighing it. It is partly guess work; but after two years of experience I do not think I get a bit of any man's whey, and I do not think he gets any of mine. It has been very satisfactory. You must wash out the tank every morning. The cheesemaker does it for us. There is always a green man who wants to learn the cheesemaking, and this is his job, and he gets in there with a couple of pails of water and scrubs out the tank.

A good many farmers buy their butter and do not churn, and they send in two days' milk on Monday morning. I may have two cans to send home, and if I forget to send two cans Tuesday morning there is always a can of whey left for some other man to take home. The farmer next the factory offered to scrub out the whey tank for two cans of whey per day. A number of farmers were fighting mad when their whey was to be returned, and fought against pasteurizing it. I knew one of these farmers who to-day would not sell his whey after two years' experience with it.

The milk drawer comes around to my place about half-past nine o'clock, and two cans are set off, and if we are working out in the fields with the horses we let it stay there until after dinner, and then we bring in the two cans and we back it into the hog pen and pour the whey into the barrels. I only require to scrub this barrel out once a month. There will be a little thin wafer, like tissue paper, of fat rise each day. I empty the barrels out every morning. It is hard to get at the feeding value of pasteurized whey, because I have not handled the sour whey, since our factory never returned it until we got it pasteurized; but I can give you the experience of a man who has had it home for six years, and this year he had it pasteurized. I said to him, "Mr. Thompson, what difference was there in the pasteurized whey and what you got home six years before?" He replied: "I could not give you the money value, but my hogs are doing a good deal better, and it is not the large hogs that are doing so much better, but the little ones. I can raise the little ones right off the sow by putting the proper proportion of middlings and flour in the whey." I know two farmers who are raising their calves on this pasteurized whey. The farmer does not like to keep home the valuable milk to feed calves. The result is to try various methods, such as porridge and hot water; and so we get a lot of deformed dairy cattle that will never make dairy cows. Therefore, I think it is an important point that you can raise little pigs and calves on it. One gentleman informed me that he gives his calves the whole whey with some whole oats and bran fed dry afterwards, and he takes the prizes with these calves; so you may be sure they are not poor ones. Another farmer I spoke to over the 'phone before coming away, told me he had been raising calves on this whey and he was well pleased; and I think if we would hold a few meetings and tell each other the benefit we have found by using the pasteurized whey we would be adopting a good plan.

We used to sell our whey to a few farmers, and they gave us a dollar a cow for it, now we are able to make from five to ten dollars per cow.

I think the by-products of the dairy should be looked after. We do not get too much for the time we spend in the dairy. Just think of a cow that gives 6,000 pounds of milk, and you let the whey from that cow go for $1 for six months. I think it would be a great deal better to have it pasteurized, and take it home and feed it. I feed 15 pounds of grain to 100 pounds of whey, and increase it to 25 and 35 and 40 pounds as the hogs grow larger. I have often gone as high as 50 pounds of grain to 100 pounds of whey in feeding hogs that were weighing nearly 200 pounds. It pays to have your hogs weighing 200 pounds when you can sell them on a good market. Hogs sell best during July and August. I always try to sell out as nearly as I can in August, and only keep as many as will drink up my whey after that. A year ago last summer I kept a strict account of my hogs. On the first day of May I weighed the hogs and valued them at what they were selling for then, and I valued my grain that I had in my granary, and I purchased some oil cake and a little middlings. I found that the oil cake was the best thing I could purchase to mix with the grain for hogs. After figuring it all up, I found that I had cleared $10 per cow on the whey, and I used to get only $1 per cow before it was pasteurized. This year I have only made $8 per cow, because I made one bad sale of hogs, and coarse grains were higher in price.

Mr. GLENDENNING: You credit the profit on your hogs to the whey, you do not give any profit to the grain?

A.—I figured the grain at market prices; I was satisfied to get the market price. I do not know how else you would get at it. I think if a man gets full market price, he is well off.

Q.—How do you feed this oil cake?

A.—It is better soaked. I would not begin to feed much oil cake until the hogs get used to it. I feed barley meal and a little middlings; about one-third of the middlings and about a quarter of that bulk of oil cake all mixed dry. When soaked in whey it makes a mixture like porridge. It is soaked every morning until night, and then again from night until morning.

Q.—If you were feeding skim milk to hogs, would you feed oil cake?

A.—Yes, I would, I think it is the cheapest feed we can buy if fed in conjunction with other grains.

Q.—What other grains do you feed with oil cake?

A.—Oats and barley and a little middlings mixed with it. This year I purchased $25 worth of middlings.

Q.—Do you feed about equal proportions?

A.—No. About $\frac{1}{3}$ middlings and $\frac{2}{3}$ of oats and barley, or about $\frac{1}{2}$ barley, $\frac{1}{4}$ oats, and $\frac{1}{4}$ middlings; and then when that is mixed add oil cake, a quarter of that again.

Q.—Do you soak the whole chop or only the oil cake?

A.—No, the whole thing is soaked. It makes a nice sticky mess. I keep six hogs in a pen and one of those candy pails is a good feed for them. I soak the mixture in the candy pail, and when I go to feed I stir it up with a stick, and it is not necessary to do any dipping.

Q.—If you were feeding peas and middlings with skim milk would you buy any oil cake?

A.—Yes, I think I would.

Q.—Flax seed would be cheaper?

A.—Yes, if you have it it would be better perhaps. I buy the oil cake for $30 per ton. I drive right to the mill.

Q.—Would you not have made a profit over the market price by using water in place of that whey?

A.—There might have been a little; but you can tell the difference in hogs if you feed water and not whey, and another thing to consider is the great quantity of manure you get. I mix it with the other manure.

Q.—Do you keep the hogs in all the time, or do you pasture them?

A.—I let them out once a day on the grass, and then into rape. They are let out a half a day at a time so they won't fight.

Q.—How much do you credit to the rape?

A.—I throw in the rape and the ashes; I put in a handful of ashes once a day into the feed and a little salt. We have found that there is not very much difference in feeding sour and sweet whey for fattening hogs; but for the young animals of all kinds it must be sweet, or practically so. For the growing animals the lactic acid seems to have a beneficial effect on the digesting of the feed; but for the young calves this sour skim milk or whey or buttermilk is disastrous. In the cheese factory sections, the farmers have much difficulty in raising good calves, and the farmer should realize the benefit of raising their own stock.

Q.—How much does it cost to raise pigs up to six weeks old or weaning time?

A.—I do not know from my own experience, but I have it from others, and they put it at $1 to $2 per animal. Do not wean your pigs at six weeks of age; I let them go to eight weeks, and the best I have had were ones that went ten weeks till they were ashamed of themselves.

Q.—Do you think hog feed is best dry or wet?

A.—I have always practiced soaking, and especially if oil cake is fed it is better soaked.

Mr. Fraser: I have always fed dry and have had better results.

Mr. Glendenning: In the summer time we feed chop, and in the winter time we put it on pulped roots in a dry state. I think a great many farmers make the mistake of giving the feed too sloppy.

Q.—Do you think it is possible to have it too wet with skim-milk?

Mr. Glendenning: I do not know anything about whey, we have lots of skimmed milk.

Q.—What temperature is the pasteurized whey when it reaches the farmers?

A.—It is quite hot the next day when it gets home.

Mr. Herns: There are some factories where the whey is nearly always short, and the makers, in order to get away from having any difficulty, increase the whey by the use of some cold water. We have two or three factories where they always pasteurized the whey, and after pasteurizing they turn around and pump cold water into it, and the result was the whey went home nearly as cold as when it was not pasteurized. The whey should go home in the morning at a temperature of at least 120 degrees, and in some cases higher than that.

Q.—Would you leave it in the cans to cool after it is delivered?

A.—No, I would get it out of the cans as quickly as I could. Where the lid slips into the can you will generally find the tin is worn off, and that will cause the rust to start. I have been sending two cans all summer, and I believe they are as good as new. When we empty the cans into the barrel we take the cans up to the house and empty a pail of water into every can; then we put it on its side and give it a turn or two and pour that water

out, and then turn it on its head on the grass. We use a brush costing 25c., and we give the can a thorough scouring inside and out. We take boiling water and scald them every day and so make the cans look nice and tidy. We have found out there is nothing better than quicksand for scouring the outside of the cans. We get a pail of quicksand, and every Wednesday and Saturday take a cloth and some of it and rub the whole of the can inside and out, and it will make the can look like a new one.

Q.—Do you commence feeding that combination of oats, barley, and middlings to pigs eight weeks old?

A.—No, I put in a larger proportion of middlings for two or three weeks, and gradually make it stronger. You should be careful when you make a change in feed, I hardly ever have any sick animals from that cause.

Q.—Do you feed any charcoal?

A.—Yes; for use in winter we mix together one bag of charcoal (pulverized to size of marbles), half a barrel of unbleached hardwood ashes, one pail of salt, and ten pounds of sulphur. Mix all well together and feed half a handful to each hog twice a week. During summer we mix a little salt in their feed each day, and give some ashes occasionally. This treatment keeps their digestive organs good and sweet.

CLEANLINESS IN THE MILK SUPPLY.

By W. F. Stephen, Secretary of the Montreal Milk Shippers' Association, Huntingdon, Que.

Doubtless many of you will remember that at the Winter Fair here last year Prof. Dean treated, very ably, a subject similar to this. In the outset of his address he referred to the "ideal" and the "real," and while we seldom attained to our "ideal," yet our aim should be to get very near to it. I consider it of foremost importance that we should have an "ideal" in every sphere of life, and in attaining to reach that goal we undoubtedly reach a higher plane than if we had no standard before us. Again, I believe every community should do all in its power to encourage those who are striving to reach an "ideal," because such ideals always serve to show those less energetic, less enthusiastic, what may be done by those who try. Therefore, every means for supplying the highest "ideal" in the line of producing a *high-grade* milk and cream should be appreciated by the dairyman, factoryman and milkman, and their continuation should be vigorously encouraged by all friends of our great dairy industry. But, alas, too frequently we find dairymen at issue with every measure brought forth to better the milk supply. I ask why is this? Is our milk supply, as regards quality, in keeping with the advanced times? I fear not.

Milk, that most palatable, wholesome, nutritious, perfect, yet inexpensive diet—it and its products now so largely consumed by all civilized nations—is it being produced under the most cleanly and sanitary methods? I fear not. Then, if not, why? Is it through ignorance of its composition, of its susceptibility to contamination, by those engaged in producing it? Is it because of carelessness on the part of the producers? Or, is it because the dairyman is not sufficiently remunerated for his labor? Possibly all three causes have a part to play in hindering the production of *clean, sanitary* milk.

Clean Milk. What does this mean? Is not all milk clean milk? It may have been, but does not always remain so. I take it, *clean milk*, is milk taken from healthy cows under the most *cleanly* conditions, to which nothing has been added nor from which anything has been taken away. Such milk contains a comparatively small number of bacteria, and if cared for and kept under most favorable conditions will always be clean milk. But, unfortunately, herein is where the trouble begins, as almost as soon as milk is drawn from the cow it becomes a subject of contamination.

I am quite convinced, that in the early days of the dairy industry, when the work of milking the cows and caring for the milk was all done by women, that a more cleanly product was the outcome than when this became largely the work of our men, who are not, as a rule, so ready to observe the essentials in cleanliness as our women. The result has been, that as time advanced, and fewer women assisted in our farm dairies, undoubtedly there went out to the cheesery and creamery a milk higher in bacterial content.

"Bacteria." We find this mysterious word so frequently associated with milk and its products that we gaze on it with alarm, but as we look at it we find nothing to alarm us further than it has opened up a new field for study, a field unknown to our forbears. To the much ridiculed "scientist" and his wonderful microscope, together with his laboratory work is this revelation due. Bacteria I will not discuss, for I am not a bacteriologist; but, we are informed by the highest authorities in that realm, that from the time the milk is drawn from the cow it is in danger of infection from some species of bacteria which are constantly present in dusty, impure air, in bad water, on unclean utensils, on the hands and clothing of the attendants and milkers, and practically everywhere. Even in pure air certain forms of bacteria that have the power of souring milk are present. Such being the case, it is up to the dairyman to minimize in every way possible the source of contamination.

Milk is the most common and most extensively used liquid food of civilized nations. It is consumed by the infant, the invalid, the adult and the aged. In the household economy it takes a prominent place, and can be used in the makeup of many wholesome and palatable dishes. Manufactured into butter or cheese, its consumption is immense, and ever on the increase. The demand for condensed milk increases as its merits become known, by steamships destined for long voyages, by mining and construction camps, and by those countries where raw milk can not be produced advantageously, and even our larger cities. Therefore, when milk enters so fully into the dietary of our people, it should be clean and pure, instead of being contaminated with health destroying germs, which only get there because of the indifference of the producer, manufacturer or dealer.

Milk Must Receive Special Care.

Every up-to-date dairyman and manufacturer knows that the flavor, aroma, texture and keeping qualities of butter are affected by the quality of the milk and cream; that gassy curd in cheesemaking is due to bad milk; that in the condensery no milk is accepted in which there is an undue per cent. of acid or milk that is off flavor. In the manufacture of these products alone there is an inestimable loss each year to our dairymen through bad milk entering into our products, thus causing a lower grade product to be put upon the market selling for a lesser price.

I would not have you infer that I assume that all milk produced is unclean milk. Nay, far from it. But I do hold that a considerable percent-

age of the milk delivered to our cheeseries and creameries is not the high class product we would expect from our dairymen in this progressive age. From a newspaper I take the following:

"In a recent number of a Bulletin issued by the Chicago School of Sanitary Instruction an inspector describes a certain farm where the barn was well built with high ceilings, plenty of windows, and a cement floor. It was newly white-washed. The milk house was clean and the milk cans stood in cold running water, but—the milkers themselves were very dirty and wore dirty clothes. The backs of their hands were covered with dirt, but the palms were immaculate—the dirt on them had been washed off by the milk. The milk stools were so dirty that a quarter-pound of dirt was scraped off the leg of one of them. The milker, who was using it said he had milked eighteen years, but had never cleaned up before milking or washed his hands before or during the operation. Nor had he ever sponged off the cows' flanks and udders."

Knowing something of the conditions and habits of our dairymen, I am free to say, while this appears overdrawn, yet, on a milder scale, it is simply an illustration of a too common occurrence on many dairy farms to-day. The remedy is simple and lies with the dairyman, simply, *clean-up*.

All that I have said regarding production of milk for the cheesery, creamery, or condensery, applies to the production of "market" or "Commercial milk," as it is frequently called. A higher class of milk should be supplied for food, as the raw milk enters largely into the dietary of infants, children, and invalids, and customers expect it to be *clean* and *wholesome*. Owing to the length of time (from 12 to 48 hours) between milking and the time this milk reaches the consumer, there is a great likelihood of its becoming contaminated. It may be clean and pure when it leaves the farm; but in transit, in the vendors' hands, and even in the home of the consumers there may be sources of contamination with which it comes in contact that practically unfits it for food.

Everywhere there is a growing demand for *clean* milk. It may be the buyer is getting as good milk as he pays for. "Certified" milk is the cleanest milk that is on the market; but the cost of production is so great and the sale so limited that it is placed beyond the power of the ordinary dairyman to make it at a profit.

The "pasteurization" of milk for household use is not popular, the heating the milk to a temperature of 160 degrees F. destroys its flavor, and makes it less digestible, and can only be carried on by those firms with large plants.

The "pasteurization" of cream for butter making, as practiced in Denmark, may be effectual in counteracting any ill effects from unclean milk, resulting in producing a superior quality of butter.

No dairyman willingly produces unclean milk, so to my mind there are three causes why unclean milk is being produced:

1st. Because of force of habit (following in the customs of our forbears). 2nd. Ignorance and indifference to sanitary methods and laws. 3rd. Carelessness on the part of the producers, makers and dealers, in not observing cleanly methods in handling milk. This latter should be considered a crime against society.

Where does the remedy lie? I answer in one word—education—to use this word in its broadest sense. It means that much missionary work must be done among the indifferent and careless dairymen before we reach our "ideal." This missionary work must be educative by giving publicity (through the press and platform) to the evils resulting from unwholesome and unclean milk. The necessity of *pure* milk, the advantages of *pure* milk and the methods to be pursued in order to attain the end sought. This is

quite essential in paving the way for the second means which must be *authoritative,* and consist in legislative and municipal regulations to govern the milk supply whether produced for the manufacture of butter, cheese, and condensed, or commercial milk.

The public are clamoring for protection, and are entitled to protection from that which is not conducive to their highest interests. In this respect they appeal to the higher authorities with a measure of success. To-day we find nearly all our large cities formulating rules to govern the production, transportation, and sale of milk, with a view to improvement. And where these regulations have been reasonable and carried out by capable inspectors the milk supply has been improved in a great measure.

These regulations usually demand that milk be produced from healthy cows, housed in clean, well-lighted, well-ventilated stables. Fed wholesome food and given plenty of pure water. The cows kept clean and milked in a cleanly way. The milk taken to the dairy room immediately on being drawn from the cow, aerated and cooled to at least 50 degrees F., all utensils coming in contact with the milk kept thoroughly clean, and the milk delivered at the station or factory in the best condition possible.

To meet moderate regulations of the above nature does not require so much of an outlay of capital and labor on the part of the dairyman as we would at first suppose. He may require to put in more windows, install some system of ventilation, do some whitewashing and make a general clean up all round, both in stables and barnyard. I know of some very ordinary stables erected some years ago, in which high class milk is being produced by observing a few of these simple rules.

To carry out city regulations one or more inspectors are necessary, to occasionally visit the farm dairy to see if the producer is meeting the requirements laid down by the Board of Health, or other authority. These inspectors can do good work if not too officious, and are men who understand the conditions under which milk is produced.

The inspector should never allow the producer to feel that he has visited him in the capacity of a spy or a policeman. Our dairymen will resist the "big stick" every time. The idea of mutual helpfulness should always be encouraged. If the producer can be shown how to produce more milk for less money (which in many instances may be done) all the better; but, at least, he should never be left until the inspector feels that he will be glad to see him upon his next visit; unless sure that he is a hopeless case. Along this line a writer has said:

"Do not expect to get everything at once; remember that the farmer is following the habits of a lifetime, and perhaps of many of his ancestors, and will have to be shown most tactfully. Show him that his stable and milk-room are kitchens in which he is preparing food ready for the stomachs of infants and invalids; you will then be in a better position to ask him to keep them clean at the time of milking and handling the milk."

I like the sentiment of the above lines from the pen of Dr. Santee, Medical expert in charge of Market Milk Investigations for New York State Department of Health. He further says along this line:

"The Board of Health that does not cause a systematic inspection of the dairy farms furnishing milk to its people is falling far short of its whole duty to the babes whose fate may be at its mercy. Experience has shown that to improve a milk supply by regulations alone is a very slow process. Better a campaign of education all along the line from the producer to the consumer. The happiest results follow a well-managed conference between health authorities, consumers and producers. Such meetings disseminate knowledge, bring about mutual understandings and mutual respect."

While in attendance at the New York State Dairymen's Convention last year I had an interesting conversation with Dr. Santee, and found he was a man of wide experience in these matters, and held most reasonable views regarding this milk question. He is a firm believer in sunlight and fresh air in the stable, and claims that *cleanliness* about the cows, stable and person, together with keeping the milk *cold* after it is drawn from the cow, will do more to insure a pure milk supply than any other measures we may put into practice. He is a great believer also in the covered or small-top milk pail, citing experiments that he had made showing that with their use in the average stables saves about 90 per cent. of the contamination.

It is recognized that much of the contamination of milk takes place during the milking operation, especially if the udder is not dampened by a moist cloth. Just here let me quote from an exchange:

"A Western Station made an experiment by placing a 4-inch gelatine plate under a cow's udder in a clean stable, holding it there for the time it ordinarily takes to milk, a man going through the motions of milking under the following conditions:

"1. Sides, flanks and udder of the cow were dampened with a solution of 4 per cent. carbolic acid and there was no bedding in the stall.

"2. Those portions of the cow's body were dampened with soap and water, cut bedding was used in the stall, and dust was raised by the man walking in to milk the cow.

"3. No portion of the cow's body was dampened, ordinary bedding was in the stall and the man softened the udder with his hands, dry, thereby setting free all the bacteria on the udder, to fall into the milk.

"The result of the experiment showed that under condition 1 the milk contained 3,200 bacteria per c. c.; under condition 2, 4,500 per c. c.; and under condition 3, 19,000 per c. c."

This experiment proves that dampening the cow's udder before milking decreases the bacteria, and that the ordinary custom of the farmer "softening" before milking, increases them.

The same may be said of allowing milk to stand in open vessels in the stable or dusty atmosphere. At the Cornell Agricultural Experiment Station, it was found that more than 5,000,000 bacteria fell into an open milk can when it was exposed seven minutes in a stable in which the air did not contain an excessively large quantity of dust. When the udder and surrounding parts were wiped with a damp cloth, contamination from this source amounted to less than four per cent. of what it was when the udder had been carelessly brushed before milking. A fly falling into the milk may introduce as many as 1,000,000 organisms. A cow's hair was found to carry 26,000 bacteria, and a small piece of hay that dropped from the cow's body was found to carry more than 150,000 bacteria.

Realizing the truth of the above, it behooves us to pay strict attention to *cleanliness* in the milking operation.

In conclusion let me draw your attention to five requirements to be observed in the production of *clean* and *pure* milk:

1st. The health of the herd and quality of food consumed. An animal that is diseased is likely to give unwholesome milk. For the protection of the health of the herd provide an abundance of fresh air and light. An occasional inspection by a veterinarian will do no harm.

The quality of food and water may have an effect on the health of cows, and thus indirectly the value of the produce. Especial care must be observed to avoid foods that are unwholesome. It is necessary, also, to avoid giving any single food in excessive quantity.

2nd. Cleanliness of the cows and their surroundings. This implies a reasonable degree of scientific cleanliness in the stable.

3rd. This refers to the utensils and their care. They should be constructed in such a way as to make cleaning easy. This demands freedom from sharp corners and cracks, and places that cannot be reached by a brush, which should always be used in preference to a cloth. They should be sterilized or scalded after cleaning and inverted in the sunlight until wanted.

4th. This requires cleanliness and good health on the part of the attendants and milkers, milking with clean clothes on, and special attention should be given to the cleanliness of the milkers' hands and to their care to keep the hands dry when milking.

5th. In the handling of the mi'k, which means its prompt and efficient cooling, and its storage at low temperature until used. The accepted limit to which milk should be cooled is 50 degrees Far.

Cleanliness and *cold* are two factors that should be observed by every dairyman, as milk produced in a cleanly way will contain fewer germs of contamination, and if kept cold until used many of these troublesome germs will have an unfavorable field in which to multiply and propagate.

Milk produced when the above requirements are observed, even in part, may entail slightly more labor than milk produced under less favorable and wholesome conditions, but it will well repay the cost in a superior article being placed upon the market which will eventually bring a higher price.

Dr. ROBERTSON, Milton: I had not the privilege of hearing all the paper, but I enjoyed very much the part that I heard, and those who heard the paper, if they will go home and do likewise, can easily have clean milk. The Government is teaching us how to increase the flow of milk, and the fat in milk, but one thing that is more important than these two things is to have clean milk. I believe it is very important from the medical standpoint that the milk supply of our cities should be cleaner than it is at the present time. Certified milk should be used altogether, especially for invalids and children. A healthy man may drink unclean milk and not be affected, but children cannot always do this, and people who are not healthy cannot do it, and I hope more agitation will take place for clean milk. I know that in Toronto they are insisting more and more on having clean milk.

Mr. FRASER: I thought milk was clean until I got in touch with these scientific men. While there is a great deal of fault to be found with the milk going into the cities, it is not all the fault of the dairy men and the stables. There is a great deal of fault to be found with the handling after it leaves his hands, and after it reaches the consumer.

Mr. GLENDENNING: I think I am a very good judge of milk, because I have been drinking milk three times a day for fifty years, and I have had some experience during the last ten years travelling around the country on Institute work. I have come to the conclusion that there is a good deal of dirty work. My wife often says to me, "How do you get along when you are away from home for milk?" and I say "I drink it, and when I get down to the bottom of the glass and I see a brown streak then I know that is something that should not be there." I believe something should be done to compel farmers to put on the market a good quality of milk. There is a class of men who shield themselves behind the price. They say, "You do not pay us enough for this." I think there is a lot of milk sold in the cities that should be confiscated. I do not think you should find a brown streak in the bottom of the glass; milk of that kind should be fed to the pigs.

Mr. FERGUSON: It is generally admitted that milk should be improved, and I was glad to note in the paper just read that education is the means now advocated. How can we apply education to the improvement of the milk in the country? I believe organization is one of the important factors.

In order to have milk produced in proper condition the first thing is to know how. The consumers, the handlers, and the producers should be organized, Put them in a position to know how to keep milk clean, and then enforce it. There can be no excuse for the man who knows how but does not do it.

Prof. DEAN: It seems to me we are not making very much progress. What we need is to get right down to some actual practical demonstration of how this can be done. My idea is that we should have in this country a few sanitary milk farms; farms that illustrate in a simple way how clean milk can be produced at a profit. We need a practical demonstration.

Mr. MCPHERSON: I can give the experience of where twenty-five cows produced $300 a cow. The milk was certified and produced at a profit under inspection. The cows were washed every day, and were properly taken care of; the milkmen were not allowed to leave the stable during milking time, they delivered the milk at the door of the stable and then it was aired and cooled immediately. The twenty-five cows showed an actual production per year of $340 each, and they paid a splendid profit.

Prof. DEAN: There are a number of these farms in the United States under the supervision of the medical authorities, but so far is I know there is nothing of that kind here in Ontario.

A MEMBER: What did that man receive for his milk?

Mr. MCPHERSON: 10 cents a quart.

Mr. STEPHEN: With the knowledge I have of the milk supply of the city of Montreal, farmers shipping milk into that city and selling it wholesale are making a good profit on their cows, and they are selling milk very low in bacteria, and milk that shows over 3.5 per cent. butter fat and over 8½ per cent. solids. There are no regulations enforced in Montreal. I have in my mind two farmers in one community; one has produced high-class milk and the other has not, and the one that is not producing good milk is constantly having trouble. We consider this unfair to the man who is aiming to meet the regulations which are required, to not make the other fellow do the same thing. The man who produces clean milk should get more for it. There are certain horses that you have to use the whip on, and there are certain men that you ought to use the whip on, and it is for these men that we want the law.

In New York and in Chicago they have regulations that all milk that comes into the city at a temperature higher than fifty degrees is liable to be thrown into the gutter. I think the sooner we make better regulations, the sooner will we better our milk supply, and I believe eventually it will be money in our pockets.

HOW TO INCREASE THE MILK YIELD.

By GEO. RICE, TILLSONBURG, ONT.

How shall we get a better cow? To this question I fancy the cow's answer is: "Get a better man to care for me."

There are few, indeed, who seem to understand that business. We may talk about balanced rations, etc., but what we want is a balanced man to feed the ration. When a man knows *how* to feed he will know *what* to feed. Almost any one can throw the feed in the manger, but something more is required. The feed needs to be given with judgment learned by experience and gained by observation of the habits and characteristics of the animal.

Stockmen know this is true of all classes of animals, but even more necessary in the dairy cow, because heavy production must be an enormous tax upon her. If a man wants to be an engineer he must serve an apprenticeship and become familiar with the mechanism of the machine. He learns the various uses of the different parts and also learns that all parts must be kept in order and run smoothly. Simply a loose nut or some trifling thing wrong may lead to disaster. Again, a man who would become a skilled cheesemaker must gain by experience, even more than through being taught the theory of the business, as so much depends upon what almost seems an intuition as to what action must be taken at different stages of the process of cheesemaking.

But the cow is vastly more intricate than any machine, and the process of making her milk is beyond the knowledge of man. Man has invented many things, but is never likely to invent anything that will turn fodder, such as the cow consumes, into such a fine food as milk.

In order that we may more fully realize the great work the cow does in producing her milk, and so be better able to understand what we are demanding of her, we must consider the *actual* value of her products.

A good cow will produce two, three, and even four pounds of butter fat a day. More indeed in pounds of fat than any other animal will produce from the same feed in flesh; but the butter fat has a value per pound five or six times greater than meat. This is by no means all, because after the butter fat has been taken from her milk there still remains solids of food value greater than any other animal could produce from the same food.

Again, a good cow will produce 1,500, 2,000, and even 3,000 lbs. of milk in a month; in other words, more than her own weight, and sometimes double her weight. You may say there is a good deal of water in this milk. Well, there is water in almost all things. Her own carcase has a large per cent. of water, and for that matter so has your own carcase. Water has a place, and even a value. We will call upon the man of science, and he will tell us that 1 quart of milk has a food value as great as 1 lb. of the best beef; in other words, 2½ lbs. of milk are equal in food value to 1 lb. of beef. When a cow produces 2,500 lbs. of milk that is equal to 1,000 lbs. of beef. 5,000 lbs. of milk=2,000 lbs. beef; 10,000 lbs. milk=4,000 lbs. beef; 20,000 lbs. milk=8,000 lbs. beef; 25,000 lbs. milk=10,000 lbs. beef.

Marvellous as it may seem, cows have produced these amounts of milk in one year, and even more. We would go a long way to see a beef animal that could grow 10,000 lbs. of beef in one year; it would be a marvel that would produce 1,000 lbs. of beef in one year.

The milk cow has shown her ability to produce food for mankind equal to what twelve or fifteen beef animals would do. Is it possible for her to consume as much food as twelve or fifteen? No. As a matter of fact, her stomach has no greater capacity than one good beef animal.

It is apparent then that we must look farther than the food alone for source of production in the dairy cow. It is also apparent that to produce largely, the dairy cow must have great vitality and constitution. The logical conclusion is that in order to get a better producing cow we must build up for vigor and a strong constitution. Has our treatment of the dairy cow been such as to make for these essentials?

My folks were among the old settlers of this Canada of ours and I have been told how, when feed ran short, and I suppose that meant the straw stack; trees were cut down and the cattle were forced to eat brouse in order to keep from starving. In my early life the straw stack was considered good enough for both food and shelter for the cow. Even now, although we have through the country fine barns, the cow does not receive the treat-

ment she should. We might as well try to take the hump off the back of a camel with a poultice as to seek to increase the capacity of a dairy cow by feeding her on a semi-starvation ration with lack of shelter and care. When we consider the heritage of the cow, her former treatment, feed and care, we must concede that she has been producing all that we have a right to ask of her when she gives us 3,000 lbs. of milk a year. If we want more we must give her better care.

The dairy cow has never had fair deal. While the horse eats the hay and oats, the pigs eat the corn, and the steer eats hay and chop, the cow has to take what she can get. Some people are indeed under the impression that it does not pay to give a cow good food. Ye Gods! And yet we are able to prove that a *good* cow can produce milk in one year a food value twelve or fifteen times greater than can a steer.

How does she do it? There are some people possibly still in this world who believe those great milk records are made by forced feeding and cramming the cow. Well, I believe it works all right to force feed down a chicken, but then there is this difference, a chicken has a gizzard and a cow has not, but only a stomach, a stomach which was originally intended for her use in producing milk for her calf. If we want her to produce those large quantities of milk for the benefit of mankind, then it is up to us to aid her as much as we can by giving her a succulent ration, in order that she may get the required nutriment with the least possible effort, and also see that she gets the proper care and a few other things necessary to her.

We must also remember that heavy production gives her a keen appetite, and care must be taken that the stomach is not overloaded. A cow would, if given the feed, eat a great deal more for two or three days than is good for her. You will better understand this if you just note how you feel yourself after gorging, say on Christmas Day. One day will not do much harm, but continue to gorge yourself for two or three days, you will likely want the doctor or undertaker.

The same with a cow. The feeder must know within a reasonable limit when his charge has had enough. Little signs tell us. The avidity of the animal, and more particularly the condition of the excrement, tells the experienced feeder how the digestive organs are working, and the niceness with which all these organs work in harmony will aid the cow to do her best work.

The importance of this will be seen when we consider that inside the well-fed animal is from 150 to 200 lbs. of fodder in various stages of digestion. But it is not the food alone we must consider. Water is quite important for a large producing cow. She will need daily from 150 to 200 lbs. It is plain that a cow cannot take all this water into her system in one or even two drinks, indeed too much water taken at once acts as a purge and means serious derangement of the system.

Food and water are important to the welfare of the cow, but we know we can feed two cows practically the same feed, and yet one will produce more than another from the same feed. From what source does this come? It is generally said, one cow has the milk-giving "function" to a greater extent than another.

What is "function?" It is a nice, big sounding word we generally use when we are "stuck.". The Indians simply give a grunt in a similar case. One expression gives us about as much information as another.

There must be some source from which this increased production comes, else the cow practically performs a miracle.

In some cases the increased production comes from the animal drawing upon its reserve, and her own body weight is reduced in giving large milk yields. But there are cases again wherein this consideration cannot explain the heavier milk yields from one cow more than another. There is still one important thing a cow uses which is not often considered, and that is *air*. Air is vital to the existence of both animal and vegetable life. A man can go a long time without food, some have fasted forty days, but deprived of air, man would soon collapse. A cow, to be a good one, *must* have large lung power. The air which she takes into her lungs oxidizes the blood, promotes circulation and digestion, and produces the power that enables her to do the greater work. We thus see the importance of pure air. If the air is impure it does not have this element of oxygen so essential to animal life and well being. Just in the proportion that we reduce the purity of the air we reduce the efficiency of the cow.

A cow to be a good one must have large lung capacity, but in order to produce well she must be supplied with a sufficiency of pure air, else her superior lung capacity is of no advantage to her.

A case to illustrate this occurred with me three years ago. I was testing two cows at home for over a month; one gave more milk and butter fat than the other right along. They both had the same air supply, standing side by side, but one was able to use much more than the other as her general conformation showed she was a cow of large lung capacity. The same two cows were brought down to Guelph in the Dairy Test, both were equal in heartiness and feeding well, but at this time the cow that had always produced the heaviest did not produce any more than the other. The reason, I consider, is that the stable where the dairy cows are kept at Guelph is so constructed that pure air cannot be supplied to the cow at her head without reducing the temperature of the stable too much. The ceiling is too high for one thing, then the cows are tied up against a solid wall and their breath had not a chance to get away from them, and they have to breathe much of the same air over and over again. A cow taking too much impure air into her lungs is injured rather than benefited. The way many stalls are built a cow should breathe through her tail, as the air has a better chance to circulate behind.

Men who have done much testing know that heavy milk cows are greatly affected by hot weather in the summer. I was testing a four year old the latter part of June, 1907. She was making 2.5 lbs. of butter fat a day. A very hot spell came on, she went down to 1.85 lbs. per day, due to nothing I am sure, but the heat. This is only one instance of many that go to show the same thing. In this case the cow was using her lungs to the best advantage when the weather was cool, but taking into her lungs so much air that was necessarily hot, it, with heat from the food she consumed (and it was only grass) made her too hot. It is just as detrimental for a cow to go to the other extreme and have it too cold. With pure air, not too cold nor yet too hot, a cow does her best. The oxygen derived from the pure air goes to the nerve centres, producing in her energy necessary for heavy production.

In the last analysis, then, a cow's capacity depends upon her lung power largely. The cow, using as she does, so much water and air, which in the winter is necessarily cold, shows us the necessity of keeping her in a comfortable place if we want milk, which in our winter means inside most of the time; or if she must be let out for water, do not leave her standing out in the cold.

It is the habit of a cow to want to drink after eating, and for that reason, if for no other, water should be in the stable all the time, and it is very little trouble to bring in the pure air. It, indeed, needs no pipes to carry it, and after showing how important it is to production as well as the health, anyone is very foolish who does not make the best use of it.

Too often those things that cost us nothing are not appreciated at their value. I cannot go into the question of temperature much at this time, but will say it is better to have a temperature in the stable between 45 to 55 degrees, rather than between 40 and 75 degrees.

Avoid great changes, and especially avoid drafts. A draft in a temperature of 75 degrees is as harmful as one at 45 degrees.

If to have pure air it is necessary to lower the temperature, remember that pure air is of more importance than a few degrees of temperature. If you were milking a cow and the temperature is below 40 degrees, put a blanket on her. If her body is kept warm the air can be cooler about the head.

We must be more particular in handling cows if fresh in winter, as a cow consumes more water and air when producing heavily.

If the cows are dry in the winter, to produce well next summer they will do much better if put in trim for the work. Good feed and pure air builds up the cow's system while she is dry, replenishing the drain made upon her by her former production, and giving her more strength and vitality to withstand the strain which the demand of maternity and production will make upon her.

A man is never paid better for any feed and care he gives a good cow than that given when the cow is dry. Proper care and feed while dry is vital to heavy production.

Not only will the cow be much better for work, but if we are to get better cows we must breed them. A calf from a cow that is in proper condition and possessing energy and vitality will be much more likely also to possess a good constitution.

We want, and must have, cows with superior constitution, which is partly a matter of birth, and partly a matter of development. A calf born with good vitality can, with proper feed and care, be developed into an animal with good stomach and lungs.

The somewhat bulky feed recommended for the dairy calf develops a good stomach, and in order that the feed may be properly digested, sufficient pure air is supplied, the lungs will be developed with use, and this gives us an animal possessing some of the essential things necessary to make a good cow.

CAUSE AND PREVENTION OF COMMON AILMENTS IN HORSES.

By J. Standish, V.S., Walkerton.

It is with some trepidation I undertake this task, although it is gratifying to me to know that the management have taken such a view of this matter that we shall consider the causes and prevention of the diseases. Generally, the desire is to consider only the diseases in their treatment. The diseases named here are all preventable, and it is more profitable to prevent diseases than to cure them. When disease exists it is advisable to secure the services of a competent veterinary surgeon rather than to hazard

the life or utility of a good animal by allowing unskilled persons to doctor it, or even the owner to take the chance, as there cannot be any doubt that men who have the same amount of intelligence to begin with and apply that to the study of diseases do know much more than the ordinary farmer or breeder. No matter how long an experience the farmer or breeder may have had the educated man having a knowledge of the experience of many experienced men, which knowledge has been acquired by study of the works published by the great authors is able to sift out more knowledge from one case than the uneducated man could out of fifty.

But every owner can easily acquire sufficient knowledge as to cause and prevention of diseases to enable him to prevent any of the diseases we are to consider. I am not to discuss the treatment, but that will be taken up afterwards by Dr. Reed. I would like to impress upon you the advisability of acquiring a knowledge of the cause of the disease and the ease with which they can be prevented.

The Minister of Agriculture stated a few days ago that the horses of the Province of Ontario are worth $80,000,000. That is a very important asset, and if we can make them more valuable by preventing them from becoming diseased it will be a great benefit to horse users. The diseases which we are to discuss are indigestion, colic, lymphangitis, heaves, azatouria, and joint ill.

Indigestion is recognized in two forms, acute and chronic.

Acute Indigestion is caused by errors in feeding, in permitting the animal to partake of much succulent food when not accustomed to it. The horse that is accustomed to dry food should not be permitted to partake of wet grass or roots or should not be given mashes in excess or a large quantity of nutritious food. Another cause is feeding oats and exercising the horse too soon afterwards before partial digestion has taken place. Digestion is aided by fluids which are secreted into the mouth, stomach, and intestines, and this fluid is not secreted or provided by the system by reason of the quantity of food consumed but by reason of the amount of properly regulated exercise that the animal receives. If an excessive amount of food is given to the animal there is no extra quantity of juice supplied, and that food instead of digesting ferments, gases are generated, these gases distend the stomach and give rise to great pain. It is the practice in some districts to give the horse an extra quantity of concentrated food in the morning or at the time it is desired to perform some extra labor. It is immediately hitched up, and after being driven some distance the animal exhibits distress, gives evidence of excruciating pain, and that is due to the fact that there is not sufficient juice to digest the food, and fermentation sets in. The same condition will give rise to flatulent colic.

Chronic Indigestion is frequently due to derangement of the teeth or glands in connection with the mouth, the teeth being deranged prevents the necessary mastication, and the derangement of the mouth in that way prevents a free flow of saliva, the food is not fully mixed with the fluid that is necessary for its complete digestion, and that gives rise to a deranged condition of the stomach. It is also frequently caused by excessive quantities of innutritious food.

When large quantities of food are permitted, the animal gorges itself, distends the stomach in that way, deranges the action of the stomach and intestines, in that way causing indigestion. Symptoms in this disease are not so extreme, still it leads to a condition of deranged poisonous condition in the stomach and intestines in that way creates many diseases that are fatal. There are many people who believe the more they can induce an

animal to consume the better results will follow—a mistaken idea that causes a very great loss, not only in food, but in the condition of the animal.

When I speak about properly regulating the food and giving proper food in only sufficient quantities, I do not wish to leave the impression that the horse should not be well fed.

It is well known that the fluids have the power of aiding in converting the food into an assimilable condition. It is not the quantity consumed that benefits the animal, but the quantity assimilated. If too great a quantity is consumed then a less quantity will be made assimilative, and the mass will ferment and cause disease.

If an animal has been fatigued and deprived of food and water for a considerable time, and then an ordinary quantity of food is permitted, decomposition will take place by reason of the weakened condition of the stomach, and if the horse has been deprived in that way it would be better to give a small quantity of food and a small quantity of water frequently, until hunger and thirst are satisfied, than to allow the animal to satisfy itself quickly.

To prevent chronic indigestion it is advisable to make a careful examination of the mouth, and if any condition exists there that prevents mastication, such as irregular teeth, then correct that so as to prevent the disease. It is customary for many people to feed their animals hay the whole time. I have known remarks of this kind: "That man is a mean man, because he does not give his horse as much oats when they are idle as when they are working," or, "He does not permit them to eat hay all the time." I think more digestive diseases have been created in this way than in any other. I say that heaves is a dietary disease, and is always caused by improper feeding, and I would make this rule, *"Never feed unless the animal has been about six hours without food."* It is advisable that the stomach regain tone, and almost completely digest the contents, before more is permitted, and for an idle horse it is well to remember that while in active labor or exercise it requires sufficient nutritious food to build up the various parts of the body, but so soon as it is laid off work the animal does not require so much food, and it is advisable not to waste food and injure the animal by giving an excessive quantity. Feeding large quantities of even clover hay will not supply the animal with all it requires, and it would be well to supplement it with something more concentrated. It is a mistake to practise to leave hay in the manger before the animal all the time. That causes a great many diseases.

Colic. There are two kinds of colic, flatulent and spasmodic; the causes are much the same as in cases of indigestion. If care is taken to prevent indigestion, colic will not be induced. In spasmodic colic, the symptoms are acute, but are not continuous as in flatulent colic, where we have distention of the abdomen with gas, which causes alarming symptoms and death.

Heaves is a dietetic disease. It is caused by neglect and thoughtlessness, in feeding large quantities of succulent food, inducing the animal to gorge itself and distend the stomach frequently, especially where palatable food is fed, or innutritious food is given, as over-ripe timothy or clover hay, badly cured. The best way to prevent it is to feed a balanced ration. Give only sufficient quantity to nourish the animal, and never feed to excess. Water frequently and exercise regularly twice a day, two or three hours in the forenoon and the same in the afternoon. You are aware of the fact that none of us are positive what the pathological condition of heaves is. It has been discovered in some instances that two or more air cells in the lungs

will be ruptured and form an enlarged cavity there. It is thought that this is the result of the disease, not the cause. In all cases of broken wind or heaves there is a primary cough known as broken wind cough, and afterwards a double heaving of the flank during expiration. Before there is a double breathing, and when the cough only exists, or in the early stages of double breathing, we have always an aggravated condition when the animal's stomach is gorged. Then the extreme distention of the stomach stretches the nerves supplying the digestive system, which is the cause of heaves, and the only thing to prevent it is to give the animal only sufficient nutritive food and water to sustain him, but not sufficient to enable him to over distend his stomach.

Lymphangitis. The next disease to be considered is a disease of the lymphatic system, the system of small vessels accompanying the veins. These vessels take up the poisonous material out of the body and convey it into the circulation to be excreted by the various excretory organs. To have the system working freely they must have the pressure of the muscles. It requires contraction and expansion of the muscles to force this fluid out of the system. If the animal that has been fed sufficient nutritive food to nourish it in active labor, and is deprived of the exercise and still fed the same nutritive food, it causes these vessels to become congested, and the nerves are irritated, causing great pain and swelling, most frequently in the hind leg, but is may be also in a fore limb.

This is known as Monday morning disease, weed, shot of grease, etc. The way to prevent it is to lessen the quantity of nutritive food when the animal is compelled to be idle, if only over the Sabbath. A horse in good condition, well nourished, and of the heavier type, is very susceptible to this disease after a day or two idleness if heavily fed. To prevent it, reduce the quantity of nutritive food Saturday evening and Sunday, and then have the animal go to labor on Monday morning as usual, and I would advise giving a bran mash on Saturday night, without any grain, and on Sunday morning, one-half the usual quantity of grain, at noon one-half the usual quantity, at night the full feed, and on Monday morning the full feed and proceed to work. In case the animal has never had an attack of this disease this is a preventive, but where there has been previous attacks, then the animal is more susceptible to the disease, and consequently will require more attention, and I would add some saltpetre to the mash on Saturday night.

Q.—How much saltpetre would you add?

A.—Four drams for an ordinary sized horse of mature years.

Q.—Have you used Sulphate of Soda?

A.—No. I would not use it for this purpose. Saltpetre reduces the amount of fibrin in the system, and it is preferable for this purpose.

Azatouria. This disease is always caused by want of exercise, and is always prevented by regular and frequent exercise. I have never known an animal to be attacked, except on the first exercise after an idle spell. Very frequently owners will tell you that the animal never left the stable gayer than he was at this time, and just went a short distance and had these symptoms. Want of exercise has always been the cause of it. An ounce of prevention is worth a pound of cure in some diseases, and in this one a grain of prevention is worth a ton of cure. It has been said by good investigators that the body is a factory of poisons, and these poisons must be eliminated from the system or disease results. The lymphatic system aids in the climination, and should be kept active by careful regular exercise.

When the horse has been in enforced idleness after being well nourished for a time, then the factory continues working without expelling these

poisons, and on the first exercise the action of the muscles, and the activity of the organs, produce a very rapid flow of these poisonous substances into the circulation, and that so acts on the nervous system that it causes paralysis of one or more parts of the body, generally a hind leg or both hind legs. To prevent the disease give frequent exercise, which stimulates the heart, liver, stomach, and lymphatic system. If an animal has to be deprived of exercise by reason of a wound or any other cause, bear in mind that it is more susceptible to this disease in forty-eight or sixty hours than if the idleness had been for a considerably longer period, so if you deprive the animal of exercise be very careful in the first exercise. Give short periods, remaining near the stable for the first or second times, and if given two or three times a day for one or two days all danger will be over.

Joint Ill. This is due to a germ that enters the body generally by the umbilicus or navel. After entering the system the germ develops, in large numbers and generally concentrates in the region of a joint causing an abscess. Sometimes they gather in the soft tissues, therefore the prevention would be to keep the germ from entering the system; and in order to do that, it is advisable to have all the surroundings of the young foal in as healthful and clean a condition as possible. Polluted stables should be cleaned thoroughly with boiling water and some strong antiseptic, such as some of the preparations of mercury, creolin, or carbolic acid. Lime sprinkled over the place is good. After the birth of the animal supply some antiseptic solution to the navel. Creolin or carbolic acid five per cent. solution. There is but little danger of the germ entering the system after the umbilicus heals.

Q.—Is it possible for a foal to contract that disease before birth?

A.—It might be possible, but I do not know that I have ever known it. Until there is a sufficient development to form an abscess it may not be recognized as joint ill.

Q.—We have known cases that developed when preventive measures had been used?

A.—I believe it might be possible for an animal to be effected before completion of delivery, but not until after delivery has commenced.

Q.—How do you account for a horse not contracting heaves on the Western prairie?

A.—The feed is not very palatable, and the water is equal to the feed, and when the horses go there from the East they are all the time endeavoring to get sufficient to nourish themselves.

Q.—Horses in the stable under similar conditions in the East do not have the heaves?

A.—It is a fact, I have never seen heaves in an animal out in the West. Still I have been told that some that have been brought from the West, that had the disease when they went there, had it when they came back.

Q.—What is the proper quantity of hay and oats an ordinary farm horse should get?

A.—I suppose you mean a good agricultural horse of 1,400 lbs. in active labor. He should have sufficient nutritive food to sustain him in good vigorous condition. It is impossible to lay down any quantity that will be sufficient in all cases. You should study the individual horse, but generally about three gallons of oats per day divided into three feeds. Some people prefer bran and flax seed. I must say that I like a little for my own horses, and on Saturday night a mash. Give about the quantity of hay they will eat in forty-five minutes in the morning, thirty-five minutes at noon and one hour at night. Some roots, such as sugar beets, mangels, turnips, or carrots are beneficial when fed twice a week, a gallon at a feed would be

sufficient to nourish four ordinary agricultural horses in idleness that is getting only sufficient exercise to keep healthy.

Q.—Which would you prefer,—mangles, turnips or carrots?

A.—A. Good Swede turnip and carrots during the period the animals are shedding their coats. In the absence of the turnips I prefer sugar beets. all roots are beneficial when fed with judgment.

Q.—Do you not think the elimination of those quack teeth doctors would have a great deal to do with the prevention of bad teeth?

A.—I quite agree with that idea. The class of men who hunt around the hotel stables and want to doctor the horse's teeth do a great deal of injury. I have known a number of horses ruined just because the owners did not know whether the horses teeth needed treatment or not. The molar teeth are all grooved, and if you file those grooves down the horse's teeth are ruined forever. Not long ago, I met a gentleman who claimed to be a superior veterinary dentist, and I asked him how many teeth males should possess and how many females should possess, and he did not know the difference between the general condition of the teeth in the male and female. If you find such people as that going through the country, it would be well to be careful how you have them do anything for your horse, particularly when it is such an easy matter for the people of Ontario to acquire a proper knowledge of these things by taking a short course at the Ontario Agricultural College, or what is better a full term course.

Q.—Is impure air in the stable the cause of indigestion?

A.—It certainly is. Pure air is absolutely necessary for the well-being of man or beast. When the air is impure there is a depressing effect on the system of the animal which prevents the heart and respiratory organs from acting freely, and that affects the digestive system.

Q.—Would ten lbs. of ensilage in the morning and ten at night do harm to a horse's teeth. They say the acid is strong?

A.—I do not think it would be injurious to the teeth; I have never fed it; but ten lbs. at night and ten in the morning would be more than I would like to feed a horse in actual work. I would not care to feed ensilage more than two or three times a week.

Q.—Can the heaves be cured after the air cells are affected?

A.—No; after heaves are established, they are incurable at any stage after double breathing is established; but they may be alleviated so that only an expert could be able to detect them.

Q.—Does it hurt a horse to feed him roots twice a week?

A.—No; but you might feed so many at a time as to derange the digestive system and induce diarrhoea, colic, indigestion, or some other trouble.

Q.—Would a small quantity of saltpetre once a week be injurious to an animal?

A.—If an animal has had exercise and is in good health it does not require it; if it is not in good health a small dose of saltpetre will not hurt him. There are cases where it will aid in preventing lymphangitis, but it should not be given in debilitating diseases.

Q.—Will you say a few words with regard to diphtheria in horses; a number of horses in our neighborhood have died from it?

A.—Perhaps cerebro spinal meningitis would be a better term. It is due to polluted water or food. It is certainly advisable where there is suspicion of it, to employ a capable veterinary surgeon. You might be mistaken between influenza and diphtheria. What are the symptoms?

Q.—I have not had personal experience, but, my neighbor lost several horses; the veterinarian said it was diphtheria?

A.—The greatest difficulty we have to contend with is in the diagnosis of disease.

Q.—Is there any cure for lockjaw?

A.—Many cases have recovered. There is a serum that is injected now that is said to be a specific.

Q.—Is there any preventive measure for distemper except keeping the horse from being exposed? Will it effect a good healthy horse as well as a poor or exhausted horse?

A.—No; an exhausted animal will be more susceptible to the action of the germ than a vigorous one. It is a disease that is caused by a specific germ, and after one attack an animal is not likely to be attacked a second time, although they have been. Any horse is susceptible to an attack of the disease.

Q.—Have you had any experience in feeding alfalfa hay; would you prefer it to red clover?

A.—Yes, I would prefer it to any other hay; more care is required in feeding alfalfa. Alfalfa that has been frozen is not good. It is a splendid food, but requires some judgment in feeding it. It is a better balanced ration than red clover. Horses fed it do not require so much grain food as when fed timothy or straw.

Wm. Smith, Columbus: There is a difference between indigestion and colic. I have no hesitation in saying they can be prevented, and I need not waste any time in talking about the causes of these diseases, because Dr. Standish has gone fully into that.

The causes are very fully understood by the farmers in this country. One of the difficulties is that they do not always put their knowledge into practice. We know that horses should be regularly fed and watered; we know that the feed they get should be of good substance. These are two things that we all know about, but the trouble is that we too often forget these points. It does not do that a horse should be fed at eleven o'clock one day and at one o'clock the next day. It does not do to have any haphazard way in feeding or watering. We should feed and water regularly, and when we know that the feed we give the horse should be good and of a proper substance, then I think we have gone a great way in preventing some of the diseases that we were speaking of this afternoon.

Colic and indigestion arise, as far as my experience goes, from very much the same source. Indigestion is a disease farmers have paid well for. Too many horses have died, and too many farmers are too willing to try some of the home remedies for five or six hours, and when they find their efforts are no good, then they hurry off for a veterinarian. By this time the horse is practically dead, and they imagine the veterinary surgeon is no good. Prevention of these diseases is in the way we feed and the way we water and the substance we usually feed. Reference was made this afternoon to the quantity of hay that should be fed. Many a noble animal in this Province has gone down because his owner was too good to him, and I believe we are very apt to err more often on that side than on the other. It is possible that the farmer can help colic. I often do that myself by using sweet nitre and laudanum and baking soda, but it does not always cure. I never monkey with indigestion. I employ those whose business it is to look after diseases of this kind. Lymphangitis is a Monday morning disease. Many of us think that if we are extra good to a horse on Sunday that we are going to put him in a better position to commence his week's work Monday morning. We sometimes imagine we can fatten a horse in twenty-four hours. You

will have very little of this disease if you give saltpetre Saturday night. I often use that with sulphur. Saltpetre, sulphur, and sometimes Epsom salts.

Q.—How much?

A.—You can't hurt them. Mix the three of them together, give a fair table-spoonful and I have never found any bad results.

Q.—My veterinarian says saltpetre is a dangerous drug in the farmer's hands?

A.—I have used pounds and pounds of it, and I never lost a horse yet with it.

Q.—He says the farmer often gives it, and it does more harm than good?

A.—I do not think so. If your horse once gets lymphangitis you may stake your existence on it he will get it again, and the chances are that before many years have passed by he will have a large leg and will be practically a ruined horse.

One word in connection with joint ill, and I think I will be voicing the sentiments of many when I say, from this disease more loss has occurred to the farmers of this great Provice than any other disease. I can well remember a number of years ago that I was losing one colt after another, and was almost discouraged from continuing breeding. When I was a boy I never heard about the germs, and I never saw any. I did not see how these little things could do any harm; but it was pointed out to me in clear terms that these germs were the cause of the disease, and I have never lost but one since from that disease, and that was my own fault. I would almost differ from Dr. Standish. I do not believe it is possible a colt could take that disease before birth, and I do not believe it is advisable that any work should be done until the cord is broken, and I prefer it to be broken of itself rather than to be cut. I use diluted carbolic acid, and that is something you have to be very careful with, because if you use it full strength you will inflict a very great injury. Any disinfectant that is advertised, I think, will answer the purpose. Attend to it at once. Delay is where one of the mistakes is made. You think almost any old time in the day will do, but you must attend to it at once and continue this three times a day until wound is healed. This disease is usually found when the mare is in the stable. And if you go to the Western prairies you do not see much of this disease.

I think heaves can be helped by careful feeding of hay and oats, and by not letting the horse have too much water at once.

Anything I have said had been from direct experience, and I have paid dearly for it. You can prevent these diseases to a great extent by first finding out the cause.

So long as the world lasts we will require veterinary surgeons, and through our own carelessness we will be compelled to turn to them for help.

TREATMENT OF COMMON AILMENTS OF HORSES.

By J. Hugo Reed, V.S., Professor of Veterinary Science, O.A.C., Guelph.

You have had two very excellent addresses, and Mr Smith told you it cost him a great deal to find out these things. It cost Dr. Standish also a great deal, and it also cost me a great deal—my time and money attending college—and it has cost me a life time work, and I don't know nearly all yet. Mr. Smith has been a very successful handler, breeder, and importer of horses, and he acknowledges he has learned a great deal by experience.

I will speak in the first place of chronic indigestion. It will be a little difficult to speak to the treatment without first considering the symptoms, but I do not think we have time to go into the symptoms. Indigestion sometimes has a tendency to constipation; improperly masticated food will be noticed in the faeces, and the horse will occasionally show slight colicky symptoms. He may consume a reasonable amount of food, but he does not look well. His hair is long and dry; he has not the life and ambition he should have.

What about the treatment? In the first place, have his mouth attended to, because in a large percentage of cases there is trouble in the mouth. Have his teeth attended to, and employ a competent man to do it. Then it is a good practice to administer a purgative; aloes, eight to ten drams, or, a pint and a half to a quart of oil, and follow that up with a tonic; but in the majority of cases we find all the horse requires is to have his teeth dressed. If the horse requires a tonic, perhaps the old tonic of iron and gentian is the best; one dram of each three times a day. I do not think we can get anything better.

Acute Indigestion, Flatulent Colic, Spasmodic Colic. I am sure that the difficulty you will find and the difficulty the ordinary veterinarian finds is to make a correct diagnosis in the early symptoms of these diseases. The symptoms in the earlier stages are so similar that it is not possible to say just which disease the animal is suffering from. Fortunately, in the earlier stages the treatment for the one would do for the other. More horses die from acute indigestion than from any other one disease. The modern veterinarian treats this disease very largely by administering medicines hypodermically, that is just under the skin. It requires special skill for this mode of administration, and I will confine my remarks to the treatment the ordinary stock owner or ordinary farmer would be likely to have about the place; and while it may appear selfish, my advice is that when you have a horse that is sick with a well-marked disease, do not fool with him yourself, but send for your veterinarian if you can get him. For acute indigestion there is no drench which can be given which will give as good results as raw linseed oil and turpentine, generally known as spirits of turpentine.

I am a believer in large doses. In giving turpentine I give large doses, and I would give from two to four ounces of turpentine, according to the size of the animal, in conjunction with a pint to a pint and a half of raw linseed oil. In the first place the animal should be made as comfortable as possible. Put in a box stall or out in a paddock. The stall should be well bedded and the horse kept from injuring himself. If the distress is very great and the animal is suffering intensely, we give a separate dose of an ordinary colic drench.

It is wise in this case to refrain from giving opium, because there is a tendency to constipation, and where constipation exists we do not give opium but we give belladonna; fluid extract of belladonna one ounce, sweet spirits of nitre two ounces, in a pint or half pint of cold water. We give belladonna and ether to ease the pain. The action will only be temporary. If the disease is not cured and if the cause of the pain and distress is not removed, we will have to repeat our anodyne doses probably several times, and we would repeat the first dose of turpentine and oil in the course of a couple of hours, if necessary. When the symptoms have become allayed, and the animal is easier, it is a good practice to give a purgative. We do not recommend the administration of purgatives in this disease during the early stages, but it has been shown that the disease is caused by errors in feeding. We have practically cured the disease, and we give a purgative

to remove from the intestines the material which is partly or wholly digested in order to prevent a recurrence of the trouble.

Spasmodic Colic. In the first place the symptoms, and in the second place the treatment are very largely the same as for acute indigestion, and it is hard to discriminate between the two diseases. In spasmodic colic in 99 per cent. of the cases no treatment is required. We were told when we were students at the Veterinary College that if we were sent for to attend a case, the symptoms of which led us to suspect spasmodic colic, to get there as quickly as we could for fear the horse would be better before we got there, and we would get no credit for our treatment. There is a great deal in that. Some give soft-soap, and one thing and another, and the horse sometimes gets better and they give the credit to the dose. Recovery will take place in from a half hour to an hour without any treatment. It is a spasmodic disease, and what causes the symptoms is the spasmodic contraction of a portion of the small intestines. This causes intense pain. When that is removed the disease is cured. Give him the same dose you give to relieve the pain in indigestion. The colic drench is belladonna, opium and ether. In this case we do not object to giving opium because there is not the same tendency to constipation.

Q.—What is the action of aconite?

A.—Aconite is the most prompt sedative we can give, it is a medicine that decreases both the number and force of the heart beats. There is probably no drug more abused than aconite. Some persons spoke here about saltpetre being abused. It is not in it with aconite. It is a drug that should never be used except by a person well versed in its actions, because the advisability of administering aconite is always indicated by the condition of the pulse. If the pulse is strong, frequent and bounding we are justified in giving aconite. Aconite very quickly deteriorates, it becomes inert, and if it were not for that there would be very many more horses die than die now. It is not at all exceptional for a farmer to keep a bottle of aconite in his stable, and if the horse is sick he gives it.

Fortunately, by the time aconite has been in the stable for a month or two you might just as well give so much water. It does neither harm nor good, and that saves a great deal of trouble that would otherwise result. It is one of the most active poisons. Large doses kill very quickly, and small doses hasten death, unless the pulse is strong and bounding.

Q.—What is likely to have been the cause of the contraction of these small intestines?

A.—Over-feeding, the same as would cause other cases of indigestion. For instance, if you turn a horse out on grass, it may cause acute indigestion or it may simply cause spasmodic colic. I have known horses that if you allow them something to drink after eating a meal they would be almost sure to have colic, and any changes of feed is likely to cause colic.

Q.—Supposing my horse has been standing in the stable two or three days, and getting very light feeds, and the next morning I want to start on a twenty-five or thirty mile drive, would you increase your feed of oats that morning beyond what it had been getting during the idle days?

A.—Supposing the horse had been well fed and working steadily, but standing two or three days, there is a case in which he might get a full feed, because he is accustomed to his full feed. It would be probably a little more intelligent not to give him so much. But if it is a horse that had been idle and fed little grain for a considerable length of time, weeks or months, possibly, and then you want to take a long drive, there is where the danger comes in of giving a full feed, because the horse's digestive

organs as well as his muscular organs have become accustomed to perform certain functions, and a horse that is not accustomed to digesting oats or other grain in considerable quantities and then is given a full grain feed, especially if hitched up and driven, will be very likely to give trouble. It is a mistaken kindness.

Q.—Would you give a small feed on starting out and another feed at mid-distance?

A.—No; give a small feed, and then make your twenty-five miles, and give him another small feed; and if you are going to remain at that stable over night give him a larger feed then.

Twenty-five miles it not too far for a horse to go between meals; it is only a three or four hour jog. Six miles an hour is only a jog. Any horse should go twenty-five miles between feeds, and I would consider it much safer to drive the full distance than to stop and let him eat a small feed half way, unless you can afford to stop a couple of hours. Twenty-five miles is not a big drive for a horse in half a day—that is, an occasional twenty-five miles. To drive that far every half day is more than any horse could stand.

Q.—What is the matter with a horse when he bloats after a day's work?

A.—It is a form of indigestion.

Q.—Would you recommend a little Epsom salts for a horse when you are changing his feed?

A.—It would not be injurious, but my opinion of giving drugs is different from what I have heard to-day. My opinion is that a healthy horse requires no medicine. If a horse is ill, then he requires medicine. I have most decided objections to the periodic or regular feeding of saltpetre, or resin, or sulphur, or anything else. A healthy horse requires no medicine, and is better without it.

Q.—How would the pulse act in spasmodic colic?

A.—During the spasms the pulse becomes frequent and full. Normal pulse is from 36 to 40. In spasmodic colic the pulse might run to 50 or 60, and when the spasm passes off we would have a period of normal pulse. It very quickly comes down to normal, and then when it has another spasm, up it goes again.

Q.—How high would you let it go before you try to check it?

A. We do not try to check the pulse; we try to ease the spasm. We give opium, belladonna, and ether.

Q.—At what stage of the trouble would you give aconite?

A.—I would not give it at all.

Q.—Suppose it ran up to 80 or 90, and is full and bounding?

A.—You will not make any serious mistake in giving a dose of aconite then.

Q.—I generally give about 30 drops of the tincture of aconite; is that too much?

A.—I would not take the value of any horse in my stable and give him 30 drops of Fleming's tincture of aconite, because I would expect it would kill him. If the aconite had been improperly kept, it might not do so; but if you gave a horse 40 drops of a good quality of Fleming's tincture of aconite it would not be alive in two hours.

Q.—What drugs are dangerous to give a mare in foal?

A.—Aloes is considered dangerous, or any drastic purgative. Unless there is some well marked disease it is better not to give medicines to a pregnant mare.

In case of chronic indigestion would you consider hot applications of any assistance?

A.—Hot applications are palliative and soothing, but it requires a very active man to keep the applications on a horse that is suffering from spasmodic colic. Unless properly applied they are more harmful than beneficial, but when properly applied they are all right. But how are you going to apply them when the horse is liable to throw himself down quickly and paw and jump to his feet again, and drop down in some other place?

Q.—How about the trocar as a last resort?

A.—You have reference to acute indigestion, or flatulent colic, in which the large intestine is violently extended with gas, and in a case of that kind I would have no hesitation in using a trocar if the distension was so great that respiration was interfered with and we were afraid death was going to take place quickly. Where we had no time to wait for medicine to act, I have no hesitation in using the trocar, and I suppose there is no person knows that better than Dr. Standish. Some years ago when I was veterinary student, I was practising with Dr. Standish, and veterinary science was not so far advanced as it is now; and when we got a case of this kind, I would want to puncture, but he would not let me. But when I got away I was the boss, and I started to puncture with very good results. Of course you must puncture on the right side. Now we use medicine, and that obviates the necessity for puncturing. We give a grain and a half of eserine or a grain of arecoline, which increases very rapidly the peristaltic action of the bowels, causing an escape of gas, and it is very seldom that we require to puncture. In some cases these drugs do not act, and then we puncture. If we get a case where the symptoms are excessive on the start we puncture right at once. There is little danger in puncturing provided we have observed antiseptic measures with regard to our trocar. The worst I have ever known to follow is the formation of an abcess.

Q.—What is the cause of tetanus?

A.—It is caused by a germ that gains entrance to the circulation from a wound, or in other ways.

Q.—Do you contend it is contagious?

A.—No, it is not contagious in the general sense of the term. It is necessary for this germ to enter the circulation, before symptoms of tetanus will be established. One of the best marked cases of tetanus I ever saw was in a colt less than twenty-four hours old. It got the germ through the navel, and it acted very quickly.

Q.—You would not contend that over exertion would bring it on?

A.—No. It is impossible for over exertion to produce tetanus.

Lymphangitis was spoken of. The treatment of this disease consists, in the first place, in the administration of an active purgative; eight or ten drams of aloes, and a couple of drams of ginger, and follow this up by a dose of four drams of nitrate of potash, night and morning. Apply heat to the affected part from the groin down to the hock. Hot water is best or bandages packed with warm batting or wool. The advisability of bathing depends to a considerable extent upon the circumstances. If it is cold weather, and the stable be not practically free from draft, I would not bathe, because the reaction will do more harm than the hot bath will do good: but if it be warm weather or in a comfortable stable, then bathe well with hot water, and after bathing apply liniment. The ordinary soap liniment that you buy in any drug store does very well. We can make a liniment by taking an ounce of oil of turpentine, about two drams of ammonia, and add to that enough water to make half a pint. That makes a reasonably fair stimulant for purposes of this kind.

Azoturia. We hitch up a horse that has been standing idle for a few days and start him out on the road. He may be looking extra well, and after you get a few hundred yards or possibly a mile or three miles, and I have known it to be as much as ten miles, you will notice the animal going lame, generally on one hind foot. You are inclined to think he has picked up a nail, you examine the foot and go on. The horse begins to perspire most profusely, and you allow him to stand. He is suffering pain and may fall down in the harness and possibly get up again, but he may not be able to rise again. You will notice in most cases a swelling over the loins. If both hind legs are affected there will be swelling over both loins. The animal's pulse will increase in frequency and strength and the respirations are increased on account of the pain.

Now what about the treatment? We are supposed to know whether the horse is liable to an attack from the fact that he has been standing idle for two or three days. At the very first symptoms cease driving, get him to the nearest stable you can and make him comfortable, and in the majority of cases that is all you need to do. It is good practice to give a purgative, and it is also good practice to put a little counter irritation over the kidneys, mustard mixed with water. A peculiarity about the symptoms of this disease is the urine is very highly colored and very thick, resembling to a great extent treacle or strong coffee.

If you keep the animal going until he falls and cannot rise you must get him on a stone boat and get him to shelter. Then he should be given a purgative. If he is staggering, and still on his feet, endeavor to hold him there and put a counter irritant over the loins. It is a disputed point as to whether the animal should get diuretics. There is a medicine called albumone that many veterinarians claim to be a specific for this disease, but that has not been my experience. I give several doses of iodine of potassium. If the animal makes an effort to get up, help him to his feet. If we get him on his feet we will have a recovery inside of forty-eight hours; but if instead of getting strong he keeps getting worse, then the case is going to be fatal. I have never known a fatal case when the driving ceased as soon as the first symptoms appeared. The trouble is, the horse often becomes affected when he is a half a mile or two miles from home. He may be going away from home, and the driver turns him around to get him home, and that is where he makes the mistake. The horse should be left where he is. If it is warm weather, leave him in a fence corner; if it is cold weather get him to shelter.

Q.—Is a horse liable to a second attack?

A.—I have in mind one mare that has had several attacks, but as a rule that is not the case.

Q.—When driving moderately is a horse less likely to attack?

A.—In some cases it may. I have known horses to take this trouble in going to the back field to plow, when they were just walking, and I have known horses to take it in the stable where they have got halter cast and in exerting themselves to get loose brought on the trouble. Easy driving would have a tendency to avoid the disease.

Heaves. This trouble has been reasonably threshed out. Of course there is no cure for heaves. The symptoms of heaves can be mitigated by careful feeding. Small quantities of roughage and a larger quantity of grain and dampening everything you feed,—hay, oats or anything else, and it is a better way to dampen the feed with lime water. Unscrupulous horse dealers know how to check symptoms of heaves. They administer certain drugs. Large doses of arsenic, will remove symptoms of the disease. It has been asked how is it that horses that have been taken to the North West

do not show symptoms of the heaves?" I think it is on account of some action of the climate. It acts on these horses as a medicine, and removes the symptoms, but does not cure.

Joint Ill. The question was asked, if it was possible for joint ill to be contracted by a colt before birth. In my opinion it is not. I do not believe it is possible for the animal in utero to contract joint ill, but I do believe that it is possible for it to contract it during the birth.

We sometimes get symptoms of the disease early in life, so early that we think that the animal must of been born with it. As a rule the animal is three or four days old before the symptoms of the disease are noticed, and in other cases it has shown within a day or two. I have heard people claim that they have noticed it within a few hours. I consider there is practically no cure. Prevention has been spoken of. Dressing of the navel with an antiseptic solution of carbolic acid;—five per cent of carbolic acid or five per cent zenolum, or any of these tar products. I prefer a solution of bichloride of mercury. I make a stronger solution than most people care to use. I make it one to two hundred and fifty and dress the cord or opening three or four times a day with this, until it is healed and dry. We may have a score of mares foaling, and they may all foal under exactly the same conditions. One or more of these foals may suffer from joint ill although preventive measures were adopted.

Q.—Would you employ disinfectant measures as soon as the navel is broken?

A.—Yes, as soon as possible after birth.

Q.—Have you known a foal born in the fall to have joint ill?

A.—Yes, but it is not as frequent as earlier in the season. Some think that the germ that gives this disease is peculiar to the stables, that is not my opinion. I think probably it exists in stables more plentifully than it does in the ground, but I think it exists in the sand. If we had animals foaling on fields where there was nothing but grass, and grass covered everything, I think we would not have any joint ill; but in most pastures there are bare spots, perhaps there has been salt there, and the animals have eaten the grass off and left the ground bare, and I think the germ exists there the same as it does in the stable. Of course I have no proof of that except experience.

Q.—How would it do to sear the navel with a hot iron?

A.—I do not think it would be satisfactory. I would not expect as good results from searing as from the result of antiseptics.

Q.—What is your opinion, should water be in the reach of horses all the time?

A.—I think it is the proper thing to do. I would have it in my stable if the stable were warm enough so the water would not freeze. Unless the horse is very hot I think he might get all the water he wants.

Q.—Do you water a horse when he is warm?

A.—Unless excessively hot I would. If I had been following the hounds for an hour or two, and the horse was pretty hot when I brought him in, I would not give him all the water he wanted. I would give him a little. If I was driving to town and came back, and he was sweating some, I would give him all the water he would drink.

Q.—And oats after?

A.—Yes.

Q.—Would you put him in a cold stable?

A.—Not if I had a warm one. If my stable is cold I will cover him. Theoretically speaking, the horse should not be watered after he is fed,

because if you press into a full vessel even more, something that is already in the vessel must escape; and it is claimed in watering horses ofter feeding, you force the food out of the stomach, and we should water the horse before feeding.

Q.—How would you do if he would not drink?

A.—My experience is that it is very hard to teach a horse to drink before meals. I have not succeeded in doing it, and I have tried very hard. My instructions to the stable man is, to offer the horse water before and after. They will not drink much before unless they are very warm, but they will take a good drink after. My horses get grain and mangles or sugar beets, and that is all they get at noon. They get no hay.

Q.—I had six horses lame in the shoulder at one time?

A.—I would be of the opinion that they were lame in some other place except the shoulder; it might be they had liver disease.

Q.—Would not three or four days rest be too much to give a horse at one time?

A.—No; mine often get a week. But I keep them in box stalls, and when they are idle they get fairly well fed.

CAUSE, PREVENTION, AND TREATMENT OF MILK FEVER IN CATTLE.

By H. G. Reed, V. S., Georgetown.

Milk fever is a disease too well known to a great many farmers. It is a disease, as you know, peculiar to newly calved cows, and rarely attacks a cow before calving, although sometimes it has been known to do so. It has been the source of great loss to the farmers of Ontario in the past, because until the last eight or ten years veterinary science had not been able to cope successfully with the treatment of that disease. Changed conditions have appeared on the scene recently, and now we can cope with it.

The cow in your herd that is most pre-disposed to milk fever is almost invariably the best cow in the herd; she is certainly not a very poor kind of cow. If you have a cow that is a poor milker she is not likely to suffer from milk fever, or if your cows are in poor condition they are not likely to suffer from milk fever. The cow that is a heavy milker is most likely to suffer from this disease; therefore it behooves the man to look after the heavy-milking, well fed cow about calving time. I have no hesitation in saying, and my experience justifies me in making the statement that the careful dairymen need hardly ever have a case of milk fever to treat. I honestly believe that ninety-nine cases out of every hundred might have been prevented if the cow had been carefully handled. If a cow is in good condition and a heavy milker, she should not receive any stimulating food for two weeks before calving; that is to say, she should receive no pea meal or wheat or corn or any heating feed of that kind. A great many dairymen are anxious to bring their cows to the highest condition at calving time, and many a valuably cow's life has been sacrificed because of that idea, on the part of her owner. Of course it is a good practice to bring them up in good condition, but a couple of weeks before they are expected to calve you should feed them on clover hay, silage or roots, and withold rich or stimulating food. See to it that a couple of weeks before calving and a couple weeks after calving her bowels are kept in fairly relaxed condition. It may be necessary to give her a couple of doses of salts before and after calving.

Some people milk a newly calved cow out completly, drawing all the milk out of the udder. I have been told by some of the most experienced dairymen in Eastern Ontario that since they have quit adopting that plan they have had fewer cases of milk fever on their hands. It is an unnatural condition for a cow's udder to be emptied out completely. In natural conditions the calf does the milking, and you can readily understand a calf would not do that. A calf would take a little milk at a time, and the cow's udder would not be emptied out all at once, and we ought to approach as nearly as possible to natural conditions. Consequently the men who milk their cows out slightly after calving have gone a long way in arresting the danger of milk fever developing. Those are in my opinion the two most pre-disposing causes of milk fever, especially stimulating food. I cannot emphasize too strongly the idea that it is a bad practice to feed heating and stimulating food to a heavy milking cow in good condition for at least two weeks before calving and a week or ten days after calving.

Treatment Of Milk Fever. At the present time the veterinary surgeon has every prospect of being able to treat milk fever successfully, provided the animal has not been dosed by somebody else before he is called in. I think a farmer may be justified in resorting to all the methods he knows to treat a sick animal, but in the case of milk fever I would say: Do not treat that animal;—simply leave her alone, and send for a veterinarian if you value the animal's life. It is absolutely dangerous to attempt to pour anything down the animals throat, even if it is only pure water. The cause for that condition is simply that a cow that has milk fever has more or less lost power of movement; the muscular systems are to a certain extent paralyzed, and all the muscles of the body are influenced to a certain amount by paralysis. You can handle their eyeballs and they make no resistance whatever. You can tell she is alive by the deep heavy breathing, but that is the only sign of life you can see. She is sometimes able to stand up, but I would say do not attempt to drench her even then because the muscles of the throat are just as thoroughly under the influence of this paralysis as the muscles of the limbs, and no animal can perform the act of swallowing when there is paralysis of the muscles of the throat.

The fluid passes the windpipe before it comes to the gullet; the windpipe is the first opening the water comes to and when there is paralysis of the muscles and you pour water in she cannot perform the act of swallowing, and then the water is just as likely to run into the windpipe as it is to run into the gullet, and I have known many and many a cow to stretch herself out and die inside of two minutes because the lungs had been filled up with water and the animal choked to death. If you administer a drench in the early stages of milk fever you are not likely to have that trouble, but you are likely to cause serious trouble later on; therefore I say, do not attempt to drench a cow suffering from milk fever.

Q.—Would it be safe for an ordinary farmer to use a rubber hose?

A.—Yes. I do not think it would require much skill for an ordinary farmer to pass a piece of hose to the cow's stomach and administer liquids in that way; he would not be very likely to make any mistake. Veterinary surgeons have introduced oxygen gas into the udder for the cure of milk fever, and that system is almost universally successful. We simply milk out all the four quarters of the udder, and we fill it up with pure oxygen and we expect to get the very best results in almost every case.

Q.—What are some of the indications of milk fever?

A.—The first indication is a certain amount of nervous excitement, she has a wild expression in the eye, she is nervous and irritable; later she

begins to move around in an uneasy way in her stall; then you will notice that the hind quarters are beginning to lose power and she will stagger in the stall and probably fall down. The chances are that being frightened she will make an effort to stand up, but will soon go down and will be unable to raise; she will probably lie on her brisket in an unnatural way, with her head thrown on her ribs; she is not able to hold her head erect. As the disease advances she will fall over on her side anl be unable to raise her head at all.

Q.—What effect has oxygen on the cow?

A.—Pure oxygen gas has a wonderfully reviving effect on all animal life. It has been used in the medical profession for a great many years, and physicians have known for a long time that patients in danger of dying from collapse have been revived by the injection of pure oxygen into the system. It has a wonderful influence on animals suffering from collapse. The udder is not the seat of the disease in milk fever. It is a disease of the nervous system, beginning at the brain and extending through the spinal cord through the whole system, and we do not treat the udder because that is not the seat of the disease. It is a disease of the nervous system; there is no question about that.

Q.—Do you ever apply ice?

A.—I would to the head, certainly. It has a cooling effect where the cow is very much excited, and sometimes in milk fever cows are very much excited; I have seen them knock their horns off in the manger. We invariably put ice on the head of an animal in that condition.

Q.—Would not heat be better?

A.—In any condition where the brain is violently inflamed it is better to apply ice.

Q.—How do you discern the difference between parturient paralysis and parturient apoplexy?

A.—In paralysis there is loss of power, but there is no loss of consciousness; with apoplexy we have loss of both power and consciouness. A cow suffering from milk fever does not recognize her newly born calf, a cow suffering from parturient paralysis is conscious and knows all about her calf; and if you go to remove the calf she will show every indication of being aware of it.

Q. Would not milking for a length of time previous to calving prevent milk fever?

A. It might certainly arrest inflammation of the udder. I do not think it would have any effect whatever in preventing milk fever setting in.

Q.—Could an amateur administer gas?

A.—I can hardly understand a complete amateur having either the appliances for administering the air, or the oxygen; still, if he had the instruments and had the oxygen and knew how to use them, I do not see why he should not be able to use them successfully. I know that amateurs do a good deal of that sort of thing. They do not know how to use a bicycle pump to pump air into the udder of a cow, and I have known cows to be destroyed by the use of that instrument. It is not absolutely necessary that we should use pure oxygen; at first we did not think it advisable to use anything else, but we have been using atmospheric air very successfully instead of pure oxygen; but we always force that air through a medicated cylinder in order to make sure that there are no germs put into the cow's udder along with the air.

Robert Miller, Stouffville: This used to be one of the most fatal diseases that men breeding cattle supposed to furnish a heavy supply of milk were subject to, and some professional gentlemen found this disease could be easily cured, as Dr. Reed has just explained to you. It is scarcely neces-

ary for me to discuss it from an experience standpoint, because lots of people will tell you that a man who breeds shorthorn cattle could not be expected to have much experience with milk fever in cows, and there is more or less truth in that; but we have occasionally a case of milk fever in a cow that is not a very good milker. I sold a heifer a year ago last Toronto exhibition; she had her first calf, and she had milk fever. The man did the best he could, and gave her genuine up-to-date oxygen treatment, but he lost her just the same.

We often have garget in the udder, and I believe that a greate loss occurs from garget in the udder than the disease we have been discussing. I got the experience of one of the largest farmers in Great Britain, the chief of the Pagham Harbor Company, where they milk hundreds of cows, and where they have 2,000 breeding ewes. He said they had the greatest difficulty from ewes going wrong in the udders and suffering in the same way. Instead of giving large purgative doses they force the cows for ten days before calving, to drink no water unless it is mixed up as a sort of mild purgative drink; they get nothing else. If they become feverish they take some of the medicine, if more feverish they drink more; just let them drink this and nothing else. Take a pail of water, an ordinary patent pail, and put in that pail of water ¾ of a pound of bicarbonate of soda, dissolve it; then take another pail of water and put in it 1¼ lbs. Epsom salts and dissolve that; then have your tub ready with four pails of water in it and into that tub pour the other two pails and do not allow the cows or ewes to drink anything else but that, and you will find that the fever in the udder will entirely disappear. I bought a cow at a sale in Hamilton, and paid a high price for her; she was within a week of calving. I hurried her home because I knew it was dangerous to delay. She was promising to be a big milker, her udder was quite large; she got an inflamed udder, and it was so painful that if you would put your fingers near her udder she would almost go out of her head, and I thought it was time to try and do something. I immediately made this mixture and gave it to her. Of course we watched her all night, and within twenty-four hours after that was given her it would make any man good to see her, and we never had any more trouble with her. I remember that case very well, because I was deeply interested. I have seen many cases since where it worked out just as well as it did in that case, and I have never seen a case that failed to effect a remedy. ¾ of a pound of bicarbonate of soda dissolved in a pail of water, 1¼ pounds epsom salts dissolved in another pail of water, and then mix that with four pails of water. Do not put the first two pails together before you put them with the other water because they will effervesce and destroy them to a certain extent.

Q.—Do you drench your cows when you give them the mixture?

A.—They always drink it; if they won't drink it at first, they will when they get a little more feverish, and the more fever they get the more they will drink.

Q.—You use six pails of water?

A.—Yes, leave it there until your cow drinks it, and in the case of sheep leave it in the pen and let them drink all they want of it; it won't hurt them or any animal.

W. F. Stephen, Huntingdon, Que.: When the Secretary sent me the programme and asked me to address this Winter Fair, it occurred to me after looking over the list of subjects, that they could not have selected more interesting or vital questions than those on the programme, particularly this one of "Milk Fever."

My neighbors as well as myself have lost a number of cows through milk fever. We have a number of heavy milking cows in our section. Many of our dairymen deliver milk in the city of Montreal, and have cows coming in at all seasons of the year. I have frequently asked myself why it is that more cows go down with the fever in the months of July and August, because these are the months when our farmers have more trouble with milk fever than any other time of the year. I have only had one case in the winter and one in the fall, and both recovered. I have had no fatal cases for the last ten years. We bring most of them through by the air treatment. The last cow I treated myself. With the first case I had, after the air treatment was adopted, I called in our veterinarian, who, with a bicycle pump, rubber tube and a teat siphon, filled the udder with air and in two hours the cow was milking. A year ago last September another cow, a large milker, contracted the disease, and I administered the air myself with a bicycle pump and in two hours we had the cow on her feet; she went down quickly, and when a cow goes down quickly one has to act quickly. In this case we could not get a veterinarian for three hours, and therefore I handled the case myself. Dr. Reed has covered the points very ably, and there is no doubt that prevention is the best remedy. My idea is to keep them in the stable in the day time and on bare pasture at night, and on no account allow a cow to gorge herself, especially within a day or two before calving. Keep the bowels open. This requires considerable watchfulness on the part of the attendant. I think it is best to feed a little bran and oil cake or other cooling and laxative food. I do not think we need fear this disease as much as we did formerly, on account of the discovery of the air treatment which is certainly a great boon to the dairy farmers. I have never known a case to occur in a cow that was a poor producer. I believe we are approaching a time when our cows will be better producers than they have been in the past. If you use common sense and carefulness you can treat this disease by using precautionary methods and using the air pump, but on no account use the teat siphon unless it is sterilized.

Q.—Did you ever know of a heifer with her first calf having this disease?

A.—No; it usually occurs in cows after they are four or five years of age.

Q.—Have you ever known a cow to have it the second month after calving?

A.—No, I have known them to have it two weeks after.

Dr. Reed: I never saw milk fever develop three months after calving. A veterinarian usually has a pump and an oxygen tank and they fill each quarter full of this air. There is this danger in using a bicycle pump; we pump in the same air that is surrounding the animal and there is no doubt there is more or less germ life in that air, and I have known of cases where farmers have killed their cows in that way, because the cow was in a filthy stable and they pumped in the air of the stable, and the cow was dead in ten hours.

Q.—Would there be any danger of that if the cow was outside?

A.—Not so much.

CAUSE, PREVENTION, AND TREATMENT OF CONTAGIOUS ABORTION IN CATTLE.

By H. G. Reed, V.S., Georgetown.

Abortion is of two kinds, contagious and non-contagious. You all know that any pregnant animal that has met with an accident or injury, is liable to abortion. That, of course, would be simple abortion. Then, again, we have animals that suffer from abortion because of the character of the food on which they are fed, as some food containing ergot. Once in a while you will have a cow that will never carry her calf the full term, and you cannot tell why. Even in a case where you know a cow has sustained sufficient injury to cause her to abort, it is good practice to remove her from contact with other animals, because there is a sympathy existing among cattle, and cows have been known to abort simply because the cow in the adjoining stall has aborted; and it is also well to remove all evidence that an abortion has taken place.

It is all too true that our herds are subject to contagious abortion. It has been a source of great loss to dairymen. It is one of the worst diseases that a dairyman has to fight. It is a germ disease, and the animal must have been brought in contact with the germ that produces the disease or she would not abort.

Q.—Has the germ ever been isolated?

A.—The germ has not been successfully isolated. Still, we know it is a germ. My brother says he thinks the germ has been identified. We know the fact of the germ's existence. If a cow aborts from contagious abortion, then, of course, you know the germ exists in your herd and you must use the utmost care. Cows contract the disease from the other animals, and a man may carry it to healthy cows unless he changes his clothes after attending to a cow that has aborted. I think the most frequent cause of infection is from bulls that have come in contact with affected cows.

The cows affected should have the infected parts washed two or three times a week, with a strong disinfectant solution in order to remove all traces of the germ. The internal organs should be washed out with a solution of carbolic acid.

Q.—When does the abortion occur?

A.—It usually occurs before the fifth month. There is a difference between abortion and premature birth. Abortion is where delivery takes place before the fœtus is alive. If a cow gives birth prematurely, the calf may live.

Q.—Is there any difference in the liquid around a calf in an abortive cow and a healthy cow?

A.—I think the germ is in the liquid.

Q.—How much carbolic would you use in the liquid to wash the animal?

A.—To wash the external parts I would suggest you use a 10 per cent. solution—10 parts of carbolic acid and 90 parts of water; for internal use that might be too strong.

Q.—How can you tell the difference between contagious abortion and simple abortion?

A.—If a man has had four or five cows abort in his herd, then he has very much reason to dread the presence of contagious abortion.

Q.—If the afterbirth comes away clean is not that a sign it is not contagious abortion?

A.—As a rule the afterbirth does not come away clean with contagious abortion, but that does not prove she is not suffering from contagious abortion.

Q.—Is it a fact that feeding a cow over stimulating food will cause her to abort?

A.—I do not think it would, but there is a possibility it might.

ROBERT MILLER, Stouffville: This is a most serious problem we have placed before us to solve in connection with cattle. I believe greater losses are suffered from this than from all the other diseases combined in connection with cattle. We get some strange experience in connection with it, and we have good reasons for thinking that a cow that has come through the contagion and got better is free or immune from the disease. I have failed to hear of one man that has lost more than two calves from one cow. I have never yet met a man who said that he knew of one cow that had lost more than two calves after they had gone a certain length of time.

I believe that it is like typhoid fever, and that contagious abortion will run its course. It looks as if it works out its own cure. It is a most dangerous and destructive disease, and you ought to take every possible means of putting it down, even if you have only a suspicion that you have it. A man using a bull on cows, where there is suspicion of her having the disease, should not use the bull on other people' cows under any circumstances.

Q.—They will, though?

A.—They should not do it, it is a case of man's inhumanity to man; a man is not a good neighbor that will do it, even if he has only suspicions that the disease exists he should not do it. If a man brought a suspected cow to my bull I should tell him to take his cow off my farm as quickly as he could, and I would go after him and disinfect the ground his cow walked on. You cannot be too severe with a man who will bring his cattle near yours when there is danger of your cattle being infected by them.

Q.—How would you proceed against a man like that? I have a case of that kind here.

A.—If there is no law to go after a man that would do a thing of that kind knowingly, then there ought to be a law just as soon as our Legislature can make it.

Mr. JOHNSTON: Suppose nothing at all is done, and no mode of checking, how long do you suppose it will take to go through a herd and be completely gone?

A.—I have known the disease to practically destroy the usefulness of a herd for three years, and then many of these cattle were destroyed; they never can become any use afterwards, because the germ that creates the disease has destroyed the breeding organs of the female.

Q.—Would the beef from a cow be considered diseased meat?

A.—Not at all.

Q.—Is this disease contracted alone from contamination?

A.—I think in every case you will find there has been contagion.

Q.—A beast getting hurt and aborting, would that be contagious?

A.—No.

Q.—Then the next day or two you have another one or two?

A.—I would try and put the first one away, no matter how honest she was about it. If within the next day or two there was another one, then I should say that cow should be considered as having the disease; and I should separate them and disinfect these cows, and disinfect the stalls, and I would begin to take more precautions by giving the other cows something to prevent them from following her example.

W. F. Stephen, Huntingdon, Que.: I quite agree, it is a germ disease. I do not think we have laws in the statute book to prevent spreading it. Personally I have suffered from that very cause. I have seen a great deal of it in my neighborhood. Five or six years ago is seemed to be contagious in the community, and the whole country for miles and miles, herd after herd suffered. It went through the stable, but it did not attack every cow. In some stables probably one-third of the cows were free from it, and in other stables almost every cow.

There is no disease we need to dread more than this. I have not feared tuberculosis and I have not feared milk fever, but I have feared this disease, and I do not think there is any disease that will reduce a splendid dairy herd quicker. Six years ago my neighbors had it on either side of me. We had only one veterinary in the neighborhood, and as I had learned the way of removing the afterbirth my neighbors would send for me, and afterwards I would attend my own cows without removing my clothing, and the wonder to me is that I did not pollute my own stable with the germs.

When I found out the danger of it I stopped tending other herds, and Dr. Spencer, who was in the employ of the *Farmers' Advocate* at the time, came to my place, and he said "Look out or you will have it in your herd just as sure as you are standing there." I asked him what was a good remedy, and he said, "A very good remedy is manufactured by the West Medical People called the West Fluid, and I will have them send you a package," and in a week's time a package arrived. Within two days I had two cows with the disease. I immediately used this preparation, as advertised, isolated the cows, and put them in another stable. I put some of it in the water troughs in front of them, and used it very freely, and I was not long in using up a quart can, and I immediately sent for five gallons. I said "If I can stamp this out I am going to do it," and used that preparation. I have used it ever since, and I have had but very few cases.

Q.—What is the name of the remedy?

A.—West's Fluid, manufactured by the West Chemical Company. There are many other remedies, carbolic acid is good, only more expensive. Zenoleum, I think, is a safe thing for a farmer to use.

Q.—Did you inject it?

A.—No, I used lime in the stables. These two cows that aborted were served within two days of a cow that had been brought to my place and served by my bull, and I believe that in that way they contracted the disease. It did not make any further headway in my stable, because I believe I used the disinfectant so thoroughly that I killed any germ life that existed.

As to making animals immune. Dr. Robertson, of Waukesha, claims to make animals immune by a system of inoculation. I am only telling you this, I do not know anything about it, but if there is a remedy of the kind it is certainly a valuable discovery. Dr. Robertson claims he has a number of testimonials, but of course we all know it is not difficult to get them in this age. If you have a cow that gets this disease you should put her to beef as quickly as you can. If you have a valuable cow be careful.

CAUSE, PREVENTION, AND TREATMENT OF INDIGESTION IN CATTLE.

By H. G. Reed, V. S., Georgetown.

You all know that the stomach of a cow is quite a different organ from the stomach of a horse. Cows are said to have four stomachs, but that is not strictly true; a cow has only one stomach divided into four. We will just speak of these apartments as first, second, third, and fourth stomachs. You all know the function of the first part which we call the paunch. It is simply a receptacle for holding the partly masticated food, a kind of store-house where the animal lays up food that it will chew at leisure. So far as disease is concerned, there are just two portions of the stomach that are of any particular interest to the farmer, that is the paunch, and the third stomach, so we will just talk about the first and third stomach and say nothing at all about the second and fourth, because from the stand-point of disease they are of very small interest to the ordinary farmer. We may have a diseased condition in the paunch if the animal gets a very large meal of some dry food and the process of digestion ceases. You will then likely have an impacted condition. If the animal has had a large meal of some succulent food for instance, clover or turnip tops, and then the process of digestion ceases, you are going to have in all probability a case of bloating, because that succulent food ferments rapidly, and when the process of digestion ceases, gases will be thrown out and your cow will bloat. A case of bloating in a cow may be serious or not; sometimes it is very serious and at other times not very much so. If your cow is only bloating in an ordinary way, tie a stick across her mouth having it around her horns and turn her out for exercise and very often she will relieve herself in that way. Sometimes it is a very serious condition, and if the animal is bloating very extensively, and if the skin seems to be blown out just as tight as possible, and you have difficulty in finding out where the hip-bone is, then you have a bad case of bloating on your hands. I believe as a rule a man with a sick animal is acting wisely and in his own interests when he sends at once for a veterinary surgeon. Occasionally, however, there is a case where there is not time to send for a veterinarian, and then you have to act for yourself when you have a case of bloating to that extent. The only way to successfully treat that animal is to puncture right through the skin into the stomach and allow the gas to escape.

Q.—Would you not administer something that would be as good as the knife? I have used both.

A.—If you got the patient early enough in the disease it is possible to counteract the formation of gas by administering medicine.

Q.—I have a very simple remedy?

A.—If a man has a simple remedy he might better not operate; I have no knowledge of any remedy.

A Member. It is good for everybody and everybody is welcome to it, I got it simply after I was very nearly at my wit's end. It is one tea-cup-full of coal-oil. I repeat the dose in two hours if the first one does not relieve.

Dr. Reed: This gentleman says no matter how violent the bloating may be you are justified in administering a tea-cup full of coal-oil and taking chances for recovery.

The Member: I do not think there is any chance at all, because I have used both the knife and the coal-oil.

Dr. Reed: I do not know the medicinal effects of coal-oil; it is a substance I have never used at all.

A Member: Do not be afraid to use it.

Dr. Reed: Puncture on the left side always; the trocar and cannula will cost from 50c to $1.25.

A Member: I have seen a jack knife and a goose-quill used.

Q.—Would it be dangerous to puncture the animal lower down?

A.—Not especially dangerous. I do not think it makes any difference for two or three inches. So long as you are pretty well up to the hip-bone. You need not fear the after results; many an animal has been saved by puncturing. If we have an impacted condition of the stomach we cannot perform any reasonable operation to relieve that. No farmer would be justified in cutting into the stomach and removing the solids. Professional men sometimes have to do it, I have removed the full of a washtub, but it is not often that that condition arises. As a rule, if an animal is suffering from impacted condition of the stomach, a good strong purgative will remove it; give two or three pounds of salts.

Q.—Have you ever had them that you had to use more than that?

A.—Often, but I would not give more than that at once.

Q.—Would you repeat a dose of salts at all?

A.—I do not care to go on continuously giving the same drug. It would be good practice to use some other purgative, such as oil or aloes. Repeated doses of the same medicine is not considered good practice.

Q.—How long have you had them off their feed and come all right with your treatment?

A.—Two or three days.

Q.—Would you be astonished to know that I had one last winter that was two weeks and never touched a mouthful of food, and I gave twelve pounds of salts altogether and a gallon and a half of oil.

Dr. Reed: Are you quite sure that the trouble was in the animal's paunch; do you think it was not in the third stomach?

A.—I am sure it was in the paunch.

Dr. Reed: The third stomach is where the food receives its final operation.

The Member: Excuse me; that is where the trouble was. I will take it back, I made a mistake.

Dr. Reed: More animals die from impaction of the third stomach than from any other digestive trouble. If you had a bloated animal suffering from impaction of the rumen you will know it at once; but this attack of the third stomach comes on very insidiously, and the farmer does not realize that he has a sick animal until it is very far advanced in the disease. The first symptom of that would be what we call a capricious appetite. It will take its dinner all right, but does not care for supper, and possibly be ready for breakfast, and then would not care for its dinner the next day. The animal does not show its usual inclination for food. Whenever you are feeding an animal, and that animal shows an indisposition to eat anything you are justified as a rule in coming to the conclusion there is something wrong with that animal's digestive system. If that be the case, if the stomach be tired and wants a rest, skip two or three meals and give good purgative doses, and the chances are that animal will be restored to its former digestive strength again. Many farmers prepare something nice and tasty and give to the animal, and in all probability that will increase the trouble; the disease will develop, and in the course of two or three days you will find the animal has no appetite at all. You will often find the contents of the

third stomach become so dried out that it is hardly possible for medical treatment to restore it to its normal functions, and they cannot perform any operations to relieve that condition.

Q.—Is there not a little opening that the food will sometimes go through and the impaction still remain?

A.—That is quite right, there is a passage through the centre of that organ through which the food can continue to pass, and very often we find slight attacks of diarrhoea in a patient of that kind.

Q.—You say you would consider that a helpless case?

A.—I do not say it is helpless, it is difficult, and the most skilful treatment sometimes will not save the animal.

Q.—The medicine will pass through and will not effect that hard stuff?

A.—Yes; you can get medicine to pass through and not affect that. When the stomach is digesting there is the peristaltic action of the muscles, relaxing and contracting, and when the animal gets an attack of that kind its muscles are paralyzed, and we have to administer purgative medicine and also a nerve tonic in order to stimulate the action of the stomach. We administer strychnine in all cases of that kind in order to stimulate the vermicular action of the stomach. A careful feeder need seldom have a case of impaction of the manyplies. A man who watches his animals can see this trouble in the beginning, and I don't think there is any trouble more easily removed if taken in time.

Q.—Have you ever known them to come that way off the grass?

A.—Yes, it is not at all an unusual condition to occur on the grass, especially the first grass in the spring where they have access to a lot of dry grass that has remained over.

Q.—What is the best thing to do?

A.—As soon as you notice the condition give a good dose of purgative medicine, and also give strychnine or nux vomica.

Q.—Would oil or salts be the best purgative in that case?

A.—I always like to give salts, oil is an equally good purgative, it is milder, and if I had to repeat my dose I would then turn to oil. I would not continue giving salts.

Q.—I have used with good results three pounds of hop yeast?

A.—I never tried hop yeast, there may be something in it. I am not in a position to give you any information along that line.

Q.—What dose of nux vomica do you give?

A.—A dram is enough for a cow or an ox. I would not advice a farmer to administer strychnine.

Q.—Do you place any value on injection?

A.—Yes, I always like an injection for impaction of manyplies. You never do any harm by giving an injection. I do not think a horned beast ever received an injury from an injection.

Q.—Is there any difference in the action of boiled linseed oil and raw linseed oil?

A.—Boiled linseed oil is not fit to be used as a purgative agent. Boiled linseed oil should not be used as a medicine.

Q.—Would not lard be better?

A.—Yes, I would prefer lard to boiled linseed oil but castor oil is all right.

Robert Miller, Stouffville: I like the way Dr. Reed explains things to us. I think he has gone to a great deal of trouble to put this matter in a form so that he could lay it before us so that we could understand it. It

is up to us now to take a lesson from him, and make good use of the knowledge he has placed before us.

There are some simple remedies our friend here mentioned. One way, he said, in the case of bloat, there is no more simple remedy than a cup of coal oil, and you always have it, and that is an important feature, because it can be administered quickly. That is something that you ought to remember, for ordinary bloat you can scarcely beat it. I do not know anything that will act quicker.

Q.—Will baking soda be as good?

A.—Not half as good, the best thing to do is to prevent these things. Feed your cattle carefully, and in order to do that you must have good, healthy, clean feed. When you begin to harvest your hay, see that it is cut in proper time, cured properly, and housed properly. Then feed it carefully, and you will never have an injury to your cattle from that hay. Then be careful when you are harvesting your straw, and this is a far more important point than many of us think, because straw is fed to a greater extent to the cattle than hay and quite properly so. Even if you have both hay and straw give straw, it is more easily digested than hay, and it makes a nice part of the well balanced ration. Straw does not get the consideration and attention that it should, for it deserves just as much attention as does the hay. It is just as important to have your straw cut at the proper time as it is to have the hay cut properly. Our duty in this thing is to prepare our food and give it to the cattle in a good common sense way, and then they will not suffer from indigestion.

Q.—Do you recommend cutting straw?

A.—In some cases if you want to mix it, I would always like to have a certain amount of long straw or hay, but do not feed everything cut just because it is not natural. I think if you have a case of impaction of the stomach and you get a passage through, you will have in some cases the experience that they get apparently a passage through scouring a little bit and you think your animal is getting all right, but do not be deceived in that way; you want to follow it up with continued doses of oil. Give them something that will nourish them and gradually clean out that impacted stuff that is sure to exist there even if there is an apparent passage through that third stomach.

Q.—Do you take all food from them?

A.—Yes; as a general thing they do not want to eat; but I take good care they do not get anything.

CAUSE, PREVENTION, AND TREATMENT OF COMMON AILMENTS OF SHEEP.

By J. Hugo Reed, V.S., Professor of Veterinary Science, O.A.C., Guelph.

It is doubtless unnecessary to remind you of the fact that the treatment of sheep for disease is a somewhat delicate matter. While sheep may be said to have generally good constitutions, they do not yield to treatment so readily as other classes of farm stock, and besides that, greater care is necessary in the administration of medicine. There is no doubt whatever in my mind that a large percentage of fatality in sheep is due, not to the disease, but to the method of administering the medicine. In giving sheep medicine out of a bottle great care must be observed in order to prevent suffocation. Those who

were here this morning heard something about that with regard to cattle. In sheep, even though the power of swallowing is perfect, greater care must be observed not to pour too large a quantity into the mouth before the animal has swallowed. In elevating the sheep's head in order that the mouth may be higher that the throat, we very soon fill up the box known as the pharynx, and some of the medicine passes down the wind pipe and causes death from suffocation, or mechanical bronchitis will result and be followed by pneumonia and death. Therefore, in administering medicine to sheep, you should be very careful to pour the medicine into the mouth in very small quantities at a time. After the animal has swallowed, let in a little more, but if it refuses to swallow do not allow more than half an ounce to enter the mouth until you make it swallow.

Worms. We propose to speak about worms first; intestinal parasites. We could spend a great deal of time going into the life history of these worms, but I do not think it is necessary to do so. I think it would be wise to confine our remarks to these varieties that trouble sheep in this province, and these are tape worm, and round worm, and we might include grub in the head, although that is not really a worm.

Tape Worms. My experience with sheep has been that they suffer more from tape worm than any other kind of worm. There are different varieties of tape worm. In order that a sheep can have tape worm it is necessary that the egg of the worm should be swallowed, and when sheep are pasturing on swampy ground, probably on ground over which during the fall hounds chase rabbits or hunt hares, they are more likely to suffer from the tape worm than in the case of sheep pasturing on high ground, because the tape worm is very largely a parasite affecting dogs, and during the time dogs are passing over, sections of tape worm will be passed and these sections or eggs have wonderful vitality. They can stand the extremes of weather, and they live through the winter, and in the spring when the sheep are pasturing over these lands they take up this larva in the grass. We sometimes wonder how it is that young lambs will get tape worm, and I am not very sure myself how they get them; but the fact is that very young lambs that have not pastured on low lying ground are troubled with tape worm. And then the theory of the manner in which they become affected, probably would not be wise to discuss. During the period when the tape worm is small in size the health of the animal is not interfered with, but later on it does not thrive and may die.

The question is, how are we going to treat affected sheep? There are a great many methods of treatment. Probably the most modern and the most successful method is the administration of turpentine or gasoline, or benzine. I have had more experience with spirits of turpentine, although I believe benzine is highly recommended by some practitioners. In the first place the animal requires to be fasted. It should not have anything to eat for from twelve to eighteen hours, and the turpentine or benzine should be given in from two to four dram doses, according to the size of the animal. The medicine must be mixed with something, and sweet milk is considered best for this purpose, one part of turpentine to seven of milk. Some recommend diluting it even as much as one to fifteen. I prefer the stronger dose, because then we have the less quantity of fluid to administer to the animal. Each animal is given a dose of this mixture after having fasted from twelve to eighteen hours, and it is well to keep them from feeding for from two to three hours after that, and it is well to keep them confined for some hours after that in order that the parasite that has been destroyed will be passed in the yard, where they can be collected and burnt.

Another successful method of treating tape worm, which may appear rather unprofessional to some of you, is to use pumpkin seeds. The pumpkin seeds are broken and then boiled. Put them on the stove with a considerable quantity of water and allow them to simmer from five to six hours, and then the strength of the pumpkin seeds is supposed to have become mixed with the fluid, and each animal should get the product of from two to four ounces, according to its size. Whether treating with pumpkin seed or oil of turpentine, or benzine, it is well to repeat the treatment in from ten to twelve days. It is not probable that one treatment will be effective, a second treatment, and, indeed, sometimes four are necessary, but as a usual thing two treatments are all that are needed.

Round Worms. The life history of round worms is somewhat the same as that of tape worms, except that they do not come from dogs. The sheep receive the larva in water; seldom running water. The symptoms are somewhat the same as in tape worm. The treatment is practically the same, except I do not think the pumpkin seed would be effective in round worms.

There is another parasite which causes what is known as the nodular disease in sheep. I am not aware that we have it in this section, but we have some in the Dominion. It causes the presence of small nodules from the size of a pea up to the size of a bean on the coating of the intestines, and each one of these nodules will be found to contain a little worm somewhat hair-like. There is practically no treatment for this trouble. It does not interfere with the thriftiness of the animal until it reaches an advanced stage; then it causes irregular digestion, constipation, followed by diarrhoea, and the only way to get rid of it is to destroy the whole flock. Get fresh sheep and keep them off the pasture on which the other sheep had become affected.

Grub in the head can hardly be called a worm, but I think it causes more loss in sheep than any of the things I have already discussed. It is caused by the sheep bot fly or gad fly during the hot months in the summer, particularly during July and August, and the early part of September. It deposits its eggs upon or near the nostril of the sheep. Some claim it is alive when deposited, but I think that is an exaggerated idea. At all events it has the faculty of motion and it follows the mucous membrane up the nostril into the cavities of the skull. The sheep experience no inconvenience whatever until the next spring, when we notice the animal is dull and seeks solitude, does not want to mingle with the other sheep. The larva have developed during the months that has intervened into little grubs from about one half inch to nearly an inch in length. They cause an irritation in the sinus, which is expressed by snuffling and nasal discharge.

One treatment for this disease is fumigation, by burning sulphur. Put the sheep in a close apartment and close the windows and doors, and then burn sulphur until the building becomes so full of the fumes that the person who is operating cannot stand it any longer. He can judge as to what the sheep can stand pretty well by what he can stand himself, and when he can no longer withstand the fumes, then open the doors and windows and allow the admission of air. The treatment is supposed to force the animal to inhale these fumes which enter the sinus and destroy the worm. They do not necessarily all escape, and I have held a post mortem upon sheep, and found a considerable number of worms dead, but they still continue to cause more or less irritation.

Another method is to make a mixture something like the tape worm mixture, one part of oil of turpentine to fifteen of milk. Get an assistant to hold the head up. Fill a syringe with this material and insert the nozzle as far down the nostril as possible and then very suddenly push the piston to force

the liquid out of the syringe and that is supposed to force into the sinus some of this liquid. I find that most of it goes to the pharynx, and there is danger of it going to the larynx. As soon as you have operated the syringe allow the animal to get its head down and leave it down till it ceases coughing. Then set it up again and treat the other nostril. Benzine or gasoline might be used for the purpose, but turpentine is supposed to give the best results. Prevention is better than cure, and the best way to prevent is either by housing the sheep during the day in fly time, or keep their nostrils daubed with ordinary pine tar and keep the troughs or box that contains the salt painted with tar in order that the nostrils and the sheep may at all times during fly time have an odor of tar. This should be attended to at least twice a week. The flies will not interfere with any part that is covered with tar even to a small extent.

JOHN CAMPBELL, Woodville: Our chairman has laid a task on me in putting an amateur to follow a professional. It is like trying to beat Dr. Reed at his own game. In the first place I would like to say that one of the good things about this country is that we are so little troubled with worms. If we had the difficulties they have in Great Britain, there would be some reason for being so indifferent about sheep. We know practically little of worms in this country, and so far as my experience goes, tape worms is the only one from which our flocks suffer.

I never had occasion to suspect that we ever had a case of round worm on our farm. I take the precaution when sheep die to open them, and try to discover the cause of death, and have found very few cases of nodular disease. I have had some trouble with tape worm, and there is a remedy which I found very good. That was the use of oil of the male fern seed. I give a teaspoonful or two or more to a large sheep. When you use gasoline or turpentine I believe in the use of Epsom salts afterwards in order to create a strong action of the bowels, and so throw off what the previous medicine has killed or weakened to such condition that they lose their power. I have more faith in Epsom salts than in all other remedies put together.

Q.—How much salts do you give at a dose?

A.—Four ounces is the maximum; from two to four ounces, and after that I give the smaller dose again, and always like to add a little ginger.

Q.—How much pumpkin seed would you give?

A. A good large handful put in the water and allowed to boil. There is no danger of over-boiling the pumpkin seed. We generally put them in whole, and let them simmer for a long time. I believe it would be better to break them.

The CHAIRMAN: There was one point hinted at that I think is an important one, and that is where worms of any kind are troublesome in the flock it is important not to let the sheep on old pasture. If you put them on fresh fields the difficulty will decrease.

Mr. CAMPBELL: That is where experience and theory differ. In municipalities where sheep are allowed to run on the roadside, they do better than if you enclose them in a field. The Hon. John Dryden was the first man that drew my attention to that. He said that where sheep were allowed to run on the roadside they did better than in fields.

Q.—How do you detect the presence of tape worm?

A.—By want of thrift and loss of skin color. I do not think tape worm is as scarce as many suppose. I am sure we often see them passing in small sections.

Prof. DAY: I know of one flock of a certain farmer, and there were certain fields on that farm that you dare not let a flock of sheep in, for if you

did, the lambs went to pieces immediately, and I also know that the sheep on that farm had considerable trouble with tape worm, and for the last seven or eight years they have been put in new pastures every year. They have had no other treatment, and I do not think you can find any tape worm to-day. It is not only a theory; it is a little experience I have had along this line.

Dr. Reed: When I commenced my duties at the College we had considerable loss from tape worm, and I started the pumpkin seed treatment; and while we may have sustained loss from tape worm since then, we have practically had no deaths. I arrived at the conclusion that these sheep received that tape worm from pasturing on certain grounds. I notified the farm manager to keep these sheep off these grounds in the spring, particularly; but it was not done, and the result was that year after year we had trouble. When Prof. Day got control of the farm department I asked him to keep them off certain plots and he did so, and with the change from field to field the result has been that we have had no trouble from tape worm.

Indigestion. The anatomy of a sheep or an ox is practically alike, except the difference in size. The stomach of the sheep resembles the stomach of an ox and is subject to the same diseases. The principal disease in sheep consists in the inflammation of the paunch or bloating; the latter occurs more frequently on rape. If a flock of sheep turned out on rape or on a turnip field, after there has been a little frost, some of them will bloat, and bloating sometimes kills sheep very quickly. It is not uncommon for a person to go out in a field and find one or more lying dead.

Where the symptoms are not serious or extreme, and where there is no danger of death taking place, endeavor to dissipate the cause by the administration of medicine, and here again turpentine comes in. We cannot name anything that acts as well as the oil of turpentine given with milk or raw linseed oil. To an ordinary sheep I would give at least three tablespoonsful. This will in the majority of cases, neutralize these gasses. If necessary we can repeat the dose in the course of an hour or two. If it be a case in which we cannot wait for the action of medicine then we must puncture the same as we would for an ox. Puncture on the left side between the point of the hip and the last rib. Puncture with a trocar if you have one or use a pocket knife. It is a good practice to follow with a purgative. To a large animal I would give six or eight ounces; there is little danger of causing super-purgation unless we give a very excessive dose. It is certainly good practice to give a little ginger mixed with the salts, probably two drams of ginger to a quarter of an ounce or a desert spoonful of Epsom salts. The idea being that it prevents griping.

Where we have the rumen or paunch filed with food the animal will be dull, the rumination ceases, and the appetite disappears, and the animal is uneasy. It is not so noticeable in a sheep as in other animals because the wool is so long that it hides it; manipulation will often relieve it. The treatment is a good purgative, and if purgation does not take place within twenty-four hours, follow it with four ounces of linseed oil, and repeat that about every twenty-four hours until active purgation ceases. It is a good practise to give a nerve stimulant, in the meantime, about fifteen to twenty grains of nux vomica, probably, to one-third of a teaspoonful, and repeat it three times a day as long as necessary.

Mr. John Campbell: I have used the trocar and cannula with good success, and I would have lost some sheep had we not used it. One we used it on won second place the next year at the International Show at Chicago. He was good enough to take second place against all that were shown at that

show, and we sold him for $125. That shows the need we have of courage when we have no time to send for a veterinarian. We should have just a little bit of nerve, and use this instrument. We have it on hand always. That instrument should be on every farm wherever there is a sheep or a cow, and you can often save the life of a beast where you have no time to send three or five miles for a veterinarian.

Q.—How deep do you put that in?

A.—So that it will go just where the gas forms; I should say two inches for a sheep. I have used turpentine with good results and have also used common baking soda in cold water.

Dr. Reed: It has not as prompt action as turpentine.

Mr. Campbell: I think flax seed has a great deal of influence in loosening what is in the stomach making way for the purgative to take the proper effect. A veterinarian I had occasion to consult not long ago always recommended the use of raw linseed oil; but I have had a great deal of confidence in flax seed, not that it will do the work itself, but it is a preparation that enables the purgative to do its work a little better.

Q.—How long after giving the flax seed would you give the purgative?

A.—I should let the flax seed do its work for a few hours.

Mr. Glendenning: If we drench a cow with salts or raw oil what stomach does that drench go into, the first or the third?

A. It depends to some extent on the condition of the animal. In health, it is supposed to enter the third stomach because there is closure of what is called the œsophageal canal that runs from the opening of the gullet to the stomach and from the first stomach to the third. In the case of impactation of the rumen in either an ox or a sheep the first stomach is where we want it, because it will have the action of liquefying and causing the motion of the contents of that stomach and in the case of bloating, particularly, that is where we want it. We give turpentine to prevent formation of gas and to neutralize the gas already formed.

Q.—Is common soda of any use?

A.—Yes.

Q.—What is the difference between oil of turpentine and spirits of turpentine?

A.—Oil of turpentine is the correct name for what is usually called spirits of turpentine. They are the same thing.

SHEEP SCAB.

By J. Hugo Reed, V.S., Professor of Veterinary Science, O.A.C., Guelph.

Whether it is fortunate or unfortunate, I must admit that my personal experience with scab has been light, but I have seen a few cases. Ontario in general is not very much bothered with the scab, although there are some sections in which it exists.

It is a skin disease that is caused by a parasite. Some of the parasites work on the surface of the skin, and some burrow between the external and internal layers of the skin, and some burrow between the internal layer of the skin and the underlying tissue.

The treatment is the same in all cases. In order that an animal may develop scab it is necessary that it be subject to infection. It quickly multiplies, and the disease is slight or extensive according to the length of time the animal has been affected.

Scab causes itchiness. The animal rubs itself against fence corners and posts, and the wool pulls out in different places. If we remove the scale we can see the parasite.

Now, about the treatment. In the first place, isolate all infected animals; or, better still, remove from the affected quarters all animals not yet affected and watch them closely.

In the North-west, where they have a large number of animals, they have a dipping-tank that is constructed at considerable expense, and is heated by steam. The most effective dip mixture is said to be what is called the lime-sulphur dip—about ten pounds of unslaked lime and twenty-four pounds of sulphur to one hundred gallons of water. The lime ought to be slaked first, and the sulphur gradually mixed with water, gradually increasing the temperature of the mixture and keeping it stirred, then the whole mixture is put together and kept at a temperature of one hundred and five. All applications for scab or other skin diseases give best results when applied warm. The wool must be raked during the time the animal is in the dip in order that the dip will come in contact with the skin.

In this part of the country where the disease is not general, each animal is dipped separately, and the dip is composed of eight ounces of the oil of tar and two pounds of sulphur to a gallon of raw linseed oil; that makes a very good mixture. You must be very careful to get the affected parts of the sheep covered with this mixture. The parasite of the scab exists very largely under the scab or scales that are formed, and it is quite possible that during the first dipping or first application of ordinary sheep dip or the mixture I have mentioned, it may not come in contact with the parasite on account of some of these scabs not being removed; hence it is wise to repeat the treatment in ten days or two weeks and if necessary repeat again.

Q.—How much turpentine do you give a cow?

A.—I have given a pound in two hours; but I consider from two to four ounces enough to give under ordinary circumstances.

Q.—Will you tell us the safest way to drench a sheep?

A.—I do not know of any way of drenching a sheep with the exception of elevating its mouth and pouring the liquid out of a bottle in small quantities until it swallows. With a pig we put a piece of rubber tube on the end of a bottle and put that in the mouth and let him chew it, but a sheep won't act in that way.

The Chairman: I am sure you will acquiesce in what has been said. It is good, sound, common sense. There is no use going about the bush and saying this and that do not exist. Our business is to find out where they do exist, and I am glad indeed to hear a prominent sheep breeder having the courage to come out and face this question, and strike right from the shoulder with regard to it. Let us make sure that we have a clean bill before we get indignant when any person accuses us of not having it. I have been asked that Dr. Reed should describe the first symptoms of foot and mouth disease.

Dr. Reed: The first symptoms of foot and mouth disease generally go unperceived. It is an increase of temperature and the ordinary stock owner will not notice it; in fact, no person would notice it. The first visible thing is a daintiness in eating. If the mouth be examined small vesicles or blisters will be noticed. The animal slobbers, and the saliva will run from the mouth, at first in small quantities, and as the disease advances, in large quantities. The tongue becomes thickened and in some cases protrudes from the mouth. In the meantime the animal, on account of the irritation of the mouth, licks at things. There is generally more or less

irritation of the feet and legs; the animal will lick the feet, and the virus, if not already existing in the foot, gets there from the animal's tongue and the foot becomes involved; not the hoof, because it is not susceptible to the disease, but the parts begin to swell, and they show these little vesicles the mouth becomes more lacerated, the ability to eat becomes less, and in some cases death takes place. Under treatment a large percentage of animals will recover.

Mr. Campbell: If there is a question that is important to sheep raisers in Ontario to-day, it is that of scab. I know men who are in this building, men who are before me, who have suffered the loss of hundreds of dollars, and in some cases thousands of dollars, from scab, and yet they have not a scabby sheep on their farm and never had. We see much in the papers of the action that our Canadian Government is taking regarding the foot and mouth disease, that is prevalent in the United States at the present time. The American Government saw fit in the middle of June last to impose quarantine restriction on Canadian sheep coming into the United States, with the result that it has completely demolished the whole pure-bred sheep business of Canada. It has done it to such an extent that there are no sheep going across from Canada to the States except a very few car loads. The high class trade is completly blocked, and the result is that men who were breeding for years, and now owning good flocks, have to let them go at what they can get. I am certain that tens of thousands of dollars will not cover the loss that the sheep breeders of Canada are suffering during the present year from scab, and why so? Because we have had scab in existence in the Province of Ontario for years, and it is one of the greatest evils that ever came into Canada, and one of the worst things to get rid of. You know perfectly well that long ago when many of us were school boys, if we would get the itch we would be ashamed of it, and would never own up to it, and our mothers would not either; and it is precisely the same with regard to scab in sheep. Some men who get it in their flocks, instead of being honest, open-hearted, and frank about it by reporting to the Government, will hide it if they can, and they will even lie about it. That is pretty strong language, but don't you forget that the success of the sheep breeders in the Dominion of Canada depends very largely upon the fact as to whether we will take active measures to get rid of this scab, and get back the good trade that we had with the other side. We have with us Dr. Rutherford's representative form Ottawa, and we know that Dr. Rutherford is doing all he can and the sheep breeders are doing all they can, but the fact remains that we have got it, and while the Canadian Government, with our strong approval is using every measure they can in order to keep the foot and mouth disease out of Canada, let us aim at getting a clean bill of health for our flocks. I tell you there are veterinarians through the country who are giving certificates for sheep they never saw, and there are car loads going through to Buffalo that have been inspected by Canadian Inspectors, and have been going in, infected with the scab. A man from New York State told me yesterday that he was in Buffalo not very long ago, and the claim was made that we had no scab in Ontario at present, but samples f wool were taken from a shipment into the Inspector's Office, and when examined under a microscope the scab was seen, and it is a fact that we have it in a few flocks.

People are apt to blame the American Government for the action they have taken, but I say, "Don't do it, friends." We should take hold of this matter, and punish everybody who does not report a case of scab. I was suspicious of having had scab on our place some sixteen or twenty years ago. We got it in the course of a trade with lambs. We took that bunch of lambs,

sheared them right in the dead of winter, and put them into a warm cattle stable, then got at them with McDougall's dip, taking the precaution of breaking up the roughness of spots. When the weather got warm and the flock was put back to sheep pens, no further trace of the disease was ever seen.

GROWING AND HANDLING WOOL.

By T. D. Wardlaw, Toronto.

I have been termed a "wool expert." In a certain way that is somewhat misleading. The ordinary acceptance of the term would lead you to believe that I could go into the minute details of the growth of wool, construction of the staple, etc., instead of which my experience has been along the practical lines of buying, grading, and manufacturing. We can safely leave the expert work to the professor and the chemist. What we want to get at is the best way to bring our wool growers and wool users together, and see what can be done to save one, if not two, industries. If I can assist in that laudable work I shall feel deeply grateful.

We are facing a problem requiring very careful consideration. We had 700,000 more sheep in Ontario in 1882 than in 1907. In all the Dominion we have almost the same number of sheep as in 1882. Ontario had in 1882, 1,900,000; 1894, 1,950,000; 1907, 1,200,000. We imported $21,400,000 of woollen goods last year; every dollar's worth of it could be made in Canada.

Is it because keeping sheep does not pay? Are we raising the wrong kind of sheep? Are we losing the wool trade from the condition in which we bring the wool to the market? Are the manufacturers able to buy wools from foreign sources more uniform in quality, in better condition, and better suited to their particular needs, than they can from Canadian growers? As to whether it pays or not to keep sheep, I may not be an authority, but in Great Britain you find on the highly cultivated farms, where rents, taxes and other expenses are higher than here, sheep are kept at a profit. It is the custom there to keep a few sheep in the pasture fields with the horses and cattle to keep down pernicious weeds. That might be done here to advantage, as a good ewe will keep down more weeds that the hired man, and will pay with her wool for her keep, while the lambs are clear profit. There is a great outcry over noxious weeds; try the sheep cure.

Great Britain grows 100,000,000 lbs. and exports 31,000,000 lbs. of wool annually.

Are we raising the right kind of sheep for mutton and wool? I cannot speak of the former, but of the latter I most emphatically say there is great room for improvement. The constant changing fashions seriously affect the wool market, but there are standard wools for which there is always a good demand. It has always surprised me to see how faithfully some farmers persist in keeping such breeds as Lincoln and Cotswold, when the manufacturers do not desire that class of wool, except for low grade carpet warp; while Leicesters and Downs, and their crosses and the crosses of Merino and Leicester, are always wanted. You may say that wool is wool, and when I take my wool to the country merchant I get the market price, and the coarse grades give a heavier yield, and therefore bring better returns. I am sorry to say there is too much truth in this. The farmer is probably a good customer to the merchant, and the latter, not willing to offend, pays the price he has no right to pay; but depend upon it he gets even before the

year is out. He must, or go out of business. This is the most discouraging to the farmer who prides himself on his fine quality of wool, as he gets no more than his neighbor obtains for his coarse, ill kept, ill tied up, and badly conditioned wool.

The condition of the wool when marketed is a most important consideration. Years ago when I bought wool in Galt market I knew the farmers whose wool could be depended upon, and those whose every fleece required examination. As I bought for our own factory, great care was taken in receiving these wools, and we willingly gave more for the choice lots and were glad to get them. The abuse we got for discriminating was rather strong at times, but what with half washed fleeces, cotts, second growth, burrs, shives, tag locks, feathers, straw and dirt of almost every kind and description, we had to draw the line. In one case a fine waggon load came in of beautifully tied up fleeces, a nice clean sheet covering them. On weighing a few they seemed to average very heavy; by close inspection I found that about a dipper of water had been carefully poured in the centre of every fleece. Another trouble was over cotts, some of them "Hardheads." Little was said of an allowance on these, but on the soft cotts there were frequently a dispute, more particularly when the farmer has wasted time in straining that cott to make it appear as if it were a free, open fleece, vainly believing this made it perfect.

Then came the burry and shivey fleeces, and wool in this condition is dreaded by all manufacturers and should be docked very sharply. I will show you specimens in a short time. There is no excuse for wools being marketed in this condition. Burdocks can easily be cut down before the burrs form, and the sheep should not have the run of the straw stack nor be housed in a building which is not absolutely clean, well ventilated, and with a tight ceiling to prevent dirt falling on the sheep.

I feel that there should be some energetic effort made by our Agricultural Colleges, Farmers' Institutes, and Sheep Breeders' Associations, to educate the wool grower as to the condition in which his wool should be marketed. As to the method of marketing wool I would like to see some better means adopted which would be as satisfactory to the farmer as to the manufacturer. Years ago, small carding factories were dotted all over the country, and the farmers took their wool there to be made into rolls, yarn, or full cloth; and, by way of digression, let me say that no better wearing goods were ever manufactured than the goods thus made. Yarn spun from the rolls at home was not strained in the spinning, nor on the knitting needles when it was knitted into socks and mitts. When the farmer and the small manufacturer came together they met as friends, and were sympathetic with each other, appreciating each others' difficulties; the manufacturer would point out any faults in the condition of the wool and the farmer saw it was to his own interest to accept and act on the advice. But now, with the closing up of the mills through the buying of ready-made clothing, cloth, and hosiery, and from tariff changes, there has crept in a feeling of carelessness or indifference to the needs of each other, and the condition of the wool as marketed has visibly deteriorated. It is therefore necessary to bring these men together, and it seems to me that one method would be to have our large manufacturers invite, say semi-annually, a certain number of wool growers to visit their factories, so that every process, from the wool in the fleece to the finished fabric could be seen and carefully noted. Then let an open meeting be held in the warehouse of the factory, where questions could be asked and answered, which would be of tremendous practical benefit to all concerned.

It has been suggested that there should be a central receiving and grading warehouse in every township or county under the wool growers' control, to which all wools should be sent, there to be carefully graded into as many grades as the trade demanded, and there would be more grades than you may have any idea of. There would be the main division of clothing and combing wools. These again subdivided into fine, medium and coarse. These again into hogget, wether, ewe, and ram, with other grades for cotts, burry, brashy, unwashed, etc. Then, at a specified time, let the wools be sold at public auction to manufacturers or dealers, when the competition would result in money value being obtained. This scheme may sound visionary; and, perhaps, with small scattered flocks as at present, it may not be practicable; but I hope the day is coming when Canada will take its place as the leading wool country in the world for such wools as it is best suited to grow. We can, in the Province of Ontario, Southern Quebec, Nova Scotia, New Brunswick and Prince Edward Island grow the soundest, stapled wools to be had. Our Leicester has a lustre and strength superior to the wool from the same breed from farther south. This wool is in great demand in the United States; it was the foundation of the worsted industry there. It was in greater demand in Canada until the tariff permitted worsted yarn to come in at low rates for manufacturing purposes. Since then it is customary in some mills to import top and simply draw and spin the yarn instead of carding and combing, so that we have mills to-day without the necessary machinery to enable them to make yarn from the fleece. This should not be. The wools grown in Canada should, so far as possible, be manufactured in Canada, and I want to tell you that the Canadian woolen and worsted mills can, and do make as good cloth as our imported. I have samples here from several of our leading mills as an object lesson, and you will readily agree with my assertion. It is a crying shame and disgrace for our merchants to use as a crowning argument in effecting a sale, "This is an imported article." I went into a clothing store in Toronto a few weeks ago to look at overcoats. I was shown one at $19, and asked what mill in Canada made the cloth. The answer I got was, "We handle only imported cloth." It was Canadian made. My reply was that I would not buy imported if I could get equally good in Canadian. I sent to a Canadian mill, got the cloth, and had this overcoat made for less than the readymade, and it is well worth $10 more. My object in wishing to know the mill from which the cloth of the readymade stock came was so that I should know whether the cloth would stand exposure. The majority of our manufacturers use the very highest grade of dyes in coloring their goods, and their dyings will stand equally well with the much vaunted imported, and much better than a great deal of the same. Get the idea out of your heads that has been hammered in by the ignorant or unscrupulous, that we do not make as good or fast colors as the imported. It is quite true that we have manufacturers who think it economy to use the lower grade of dyes; but they are in a minority, and they would be forced to quit the habit entirely if public opinion demanded it; but so long as you want a suit of clothes for $6.99, you must not expect too much, and you must know that low-priced shoddy goods are the dearest you can buy.

Imported Goods. One of our leading manufacturers told me last week of going into a merchant tailor shop in his own town where he was shown the very latest things in imported tweeds, just received. "Why couldn't Canadian mills make goods like these?" Out of the twenty pieces on exhibition, thirteen of them were my good friend's own make, and he could not say anything for fear the merchant would row with the wholesale firm from whom he bought, and they in turn would cut out the manufacturer. This is much

more prevalent than you are aware of, and it seems to me the Canadian manufacturers should stamp their names on the back of every piece of fabric they make, on which it could be placed without affecting the material. I may say I am pleased to know that some of our manufacturers are doing this; and you should first ask for stamped Canadian goods, as you may be sure a manufacturer will not brand an article he cannot recommend. In this way you assist the Canadian manufacturer, and by assisting him you assist yourself. You create a better local demand for your wools, you get goods that you can depend upon as being absolutely reliable. There is another method by which a lot of low trashy goods could be—to a certain extent—kept out of Canada; or, if they did come in, they would have to compete more fairly with goods of better quality, and undervaluation would become much more difficult, if not impossible. This method may run counter to the ideas of many, and it would require careful adjustment, so that while benefitting the majority it must not hurt the minority.

Now I am going to skate on thin ice for a few minutes. I believe a duty on wools such as are grown in Canada of 3c. per lb. on greasy, 6c. per lb. on washed, 9c. per lb. on scoured, would prove of great benefit to the wool growers, while a specific duty of 12c. per lb. on manufactured goods would be of equal benefit to the manufacturer. This, as I have said, would hit the imported low grade goods good and hard, and they deserve it; but what effect would it have on Canadian made goods? Presuming the customer had to pay the full addition of 12c. per lb., what would that amount to on a suit of clothes? It takes seven yards to make a suit. Summer weights run from 8 to 10 ounces per yard, winter weights from 10 to 14 ounces per yard. Take the extreme in both cases, namely; summer weight at 10 ounces per yard, 7 yards—4 lbs, 6 ounces, at 12 cents, equals 52½ cents, the additional cost of a suit of clothes; while for winter weight at 14 ounces per pard, for 7 yards—6 lbs. 2 ounces, at 12 cents, equals 73½ cents per suit of clothes. These are not serious amounts if you had to pay them, but you do not have to pay them. This at first thought may seem strange, but not so when made clear to you. The fixed expenses of a factory such as interest on investments, depreciation on plant, insurance, taxes, office, travelling, and many other items, are practically the same whether the factory is running 50 per cent. of its capacity or to its full capacity. From this you can readily see that the cost of manufacturing would be tremendously reduced if the latter condition existed. In addition to this, if the Canadian manufacturer had a larger share of the home market, he would not be compelled to make single pieces, or five or ten pieces of a pattern, but could get a good run of say one or two hundred pieces. You can see how this would lower the cost of manufacturing, One manufacturer estimates it at 15 per cent. You may say this is all very well for the manufacturer, but where does the customer come in? In the woollen business, on account of the great diversity of goods made, there is little possibility of a manufacturing trust to uphold prices. For should such be attempted there would be such a rush for practical manufacturers to get into the business that the home competition would keep prices down to a fair living margin, and you would reap the benefit of it by getting better goods at the lowest market value. Some people have the idea that if the public want such shoddy goods as are made by the experts of Britain and Europe, "Let us make such goods for them." That is easier said than done. We would be up against the most expert shoddy manufacturers in the world. Some men boast that, "Given any fibre with two ends they can make it into yarn." Why, they actually use a cotton thread for a core and cover it with "flocks," that is the shearings off the face of the cloth. This yarn is used for

a filling or a backing for the most presentable fabrics. Probably the facing is fine worsted, and the suit of clothes made from this cloth looks fit for anybody; but it is a delusion and a snare. You soon find your elbows and knees breaking through, as there is little wear in the thin facing, and there is none in the rubbishy backing. I will not dwell longer on this phase of the question. You may say this digression is irrelevant to the subject upon which I was to address you. If so, it is so closely allied to it that it may be almost considered as an integral part.

In worsted mills the Leicester wool is much in demand for hosiery yarn, particularly for boys' and girls' hose. It is used for the sweater and jacket trade, and when crossed to say a quarter, three-eighths, or one-half blood Merino, it is eminently fitted for the medium grades of hose and half hose, fingering, and knitting yarns. The much used Shetland floss is made from this, or from a blend of it and the longer stapled Downs, also a great deal of our worsted cloth of which I have samples; while in the woollen mills it is used for mackinaws, blankets, etc. The blanket made of these wools is light and lofty, a 7 lb. blanket being more bulky than a 10 lb. one made of Cotswold or Lincoln. Of the Down wools, any of them are well suited for our mills. I think it would be well to have more Dorset Horn sheep, so long as we are afflicted with the curse of so many dogs. They are practically dog-proof, are very prolific, and the lamb wool, that is the shorn lamb, is one of the best wools obtainable for underwear as it is of fine quality, has a beautiful silky lustre and excellent wearing properties. This breed should be kept in dog infested districts, as they will fight a dog without hesitation, their horns being used to good effect.

In reference to the various Down sheep, care should be taken in keeping the flock free from sheep yielding brashy and kempy wool. Do not be afraid to make mutton of them. The brashy wool is of a dry, harsh nature, and works up rough in manufacturing, while the kemp in the wool being dead staple, breaks up in the manufacturing, much of it drops as waste, and what remains is a detriment, as it does not take the color in dyeing.

Cotted fleeces, as I mentioned before, are a source of trouble. Carelessness is the great cause of this. Letting sheep stop under the drip of a roof until the suint is literally washed out of the wool, leaves the wool in condition to readily felt, and wool always felts at the bottom of the staple first. With the suint, or natural oil, in the fleece there is little danger of cotting. Should the natural supply of oil be cut off from sickness, a cotted fleece may result. Sheep should never be kept in a cold building in which they are liable to be overheated and sweat. All the wool from the far West, that is, from districts where the sheep are protected in warm sheds, are fitted for woolen but are used for worsted mills, as the change in temperature from below zero to sweltering heat, cause the sheep to sweat, and thus, respectively, retard and accelerate the growth of the staple to such an extent that by careful examination of the staples you can form a good idea of how many times they have been overheated. The wool is so attenuated and weakened by the sweating periods that the staple breaks at these places, and thus becomes useless for combing, but it can be advantageously used in a woolen mill. This emphasizes the necessity of keeping the sheep in well-ventilated buildings. Second-growth wool is easily obviated by shearing the sheep at the right time.

Cotts and second-growth wools are very wasteful in mills, more particularly in worsted mills, as all the felted bottom of the cotted fleece goes into noil, as does all the second-growth wool. As noil, it is of much lower value than as top. When burry and shivey wools are combed, the burrs and shives go into the waste dropped below the carding machine, or into the noils, and

the only way to remove them is by carbonizing. This is done by soaking in sulphuric acid and water for say one-half hour, then extract and dry at a temperature of 200 degrees Fahrenheit until the vegetable matter becomes black. It is then put through a duster to remove the dry burnt matter, then soaked in soda and water to neutralize the acid, and then rinsed in water to remove the soda. From this you will see the trouble burrs and shives cause the manufacturer.

Noils made from Canada wool are worth, say, 15 cents per lb. when free of burrs and shives. One of our Canadian manufacturers, finding himself over stocked with burry noils, sent a fair sample to the English market. The best offer he could get was 5 cents per lb. delivered. Noils from British-grown wools are free of these disagreeable, wasteful substances, and can be profitably handled by the manufacturer.

Noils are good, sound wool, although a shore staple, as the foregoing operations in no way injure the staple, as you can see by these samples here. They are well suited for woollen mills and help to give body to many fabrics; but if seedy and burry they must be carbonized, and this, as has been explained, adds to their cost, and does not improve the staple, either in quality or color. Can you wonder manufacturers insist on getting clean wools?

The manufacturer can buy imported wools free of these faults and very evenly graded for his particular requirements. When buying home-grown wool from the farmer he gets quite a large percentage of wools totally unfitted for his purpose, and either disposes of such as is unfitted or works it up at a disadvantage. From this it will be easy for you to see the advisability of keeping certain definite breeds or crosses of sheep, and keeping them clean, so that the wools will be of as near a uniform quality as possible, and thus be perfectly acceptable to the manufacturer and yield you the highest market price. You cannot expect the top price for mixed and ill-conditioned wools.

In the Argentine Republic the wool industry has developed to a most extraordinary degree in cross-breds, Merino and Leicester, and Merino and Lincoln are the leading crosses. These wools are so accurately graded in the unwashed state that manufacturers can order qualities from Nos. 1 to 6 and depend on their uniformity. This, to a manufacturer, is a most important consideration, and it behoves our Agricultural Colleges and Farmers' Institutes to see that the growers are thoroughly imbued with the necessary knowledge to have their wool graded in a similar manner.

Then comes the question of washed or unwashed wools. So long as the demand from the States exists, and you depend on it, so long must you wash the wool on the sheep's back, as the duty of 12 cents per lb. is the same on Canada-grown combing wool whether washed or unwashed. Personally, I believe in not washing the sheep. It exposes the sheep to sometimes very inclement weather and seriously affects their general health. This applies more particularly to the ewes. The washing of sheep is sometimes a most uncomfortable job. I found it so, when, as a lad of fifteen, the farmer, with a gentle twinkle in his eye, gave me old "Billy," the ram, to wash. It has been a moot question ever since whether I washed Billy or Billy washed me. I do know that it required a visit to a near by thorn tree to make me presentable on the way back to the farm.

After the sheep are washed they should be kept in a clean pasture field for not more than four days. If longer than that the natural oil begins to work its way up the staple and very soon the fleece can be classed as unwashed. When ready to shear, have your shearing pen or floor made perfectly clean; sweep it out. As each sheep is shorn spread the fleece out flat on the floor,

tips up. Remove all adhering tags of foreign matter, and if there is any very coarse, hairy britch take it off, throwing all such skirtings in a separate pile. Then fold the fleece, tips in, roll from both ends, tie with smooth cotton twine, and put in a clean place. Use the broom, and bring in another sheep. Should any of these be burry or cotted put in a separate pile, tie up in separate sheets, or pack in separate bales. Then when you go to the market you can demand and obtain the highest market price. If you are not satisfied with the local buyer, then you had better—if your clip is large enough—make a permanent arrangement with some manufacturer or dealer in whom you can trust, and ship him the wool. He in turn will treat you right, as he wants good, well-cared for wool, and is only too glad to get it. Obtain his confidence, and you may be sure he will give you the very best figures the market warrants, so that he may get your next clip.

I have known farmers come to the factory during the wools season and ask the price of wool. This was told them in good faith. In a few days the wool came, unwashed, and great indignation was expressed when they did not get the price quoted. They knew well that the price was on washed wool, and tried to reap an advantage by a contemptible trick. Such tactics should be severely condemned, and, were a Wool Growers' Association is in existence, such dealings should be reported to, and dealt with by them.

When a manufacturer is fitted with proper facilities for scouring wool, I think it much better he should have it unwashed, as the fleece is less broken, and the nature and good qualities of the wool are better preserved; but whether washed or unwashed, the farmer who wants the confidence and esteem of the manufacturer should see that each fleece is free from taglocks and any foreign adhering matter. Never use sisal or any kind of binding twine, as so often it breaks in the wool and acts like burrs or shives. Do not coil the end of the fleece to bind it. The sorter in the mill cannot afford the time to uncoil this. He requires the fleece so that when he removes the string he can throw the open fleece on the table and quickly separate it into the various grades or sorts to which it belongs, taking the head, belly, legs and britch from the main body of the fleece. To do this correctly and quickly requires a man of thorough training, and it is on him rests the responsibility of the uniformity of quality in the many varieties used in the mill. It is important he should receive the wool in as good condition as possible, as he must handle a lot in a day, and he must handle it expeditiously.

Some farmers tub wash their wool. This is most unwise when they want to sell the wool. It was all right when they had rolls made, but to a manufacturer it is only worth the price of the lowest quality or sort in it, as it is too slow a process to hand sort it in this condition, and it must be thrown into the lowest grade represented in it.

If farmers had the proper facilities for washing their sheep, they could do much better than wash them in the river. A large tank, say 3 feet deep, with 2½ feet of water in it, and sufficiently wide to let three or four sheep be handled at once, is infinitely better, as the free potash from the first few sheep would so change the water that it would act as a detergent or scouring agent, and succeeding sheep would be more easily washed and have much whiter wool.

It would be necessary to have a supply and over-flow pipe to regulate the depth of water.

What I have written here is more like a quiet talk with you than a carefully and logically prepared article. Were I to sit down with a few of you in a quiet corner, I could talk wool and manufacturing by the hour, tell you of the various wools in foreign countries, and the purposes to which many

of them are specially adapted. Why a wool for clothing is unsuited for certain carpets, why Canada wools are not fitted for felt boots, why a wool from Persia is. How Australian and New Zealand long stapled fine wools are manufactured on the Bradford system of worsted, while the shorter staples are made up in the Belgian and drv spun system, with the particular uses to which each are put. But that would be outside of the object of the meeting. Capital will not easily invest in the woollen industry for two reasons, lack of interest by our wool growers, and lack of knowledge or indifference of our legislators.

Lieut.-Col. D. McCrae, Guelph: This wool question is a very difficult one to deal with. It is almost impossible for the Canadian farmer to keep his wool as clean and clear as the English farmer, as the English flocks are always on the grass and never housefed.

The last speaker is advocating a duty on wools and a corresponding duty on woollen goods, which he says would put things right. I am not sure that such would be the case. He says about 3 cents a pound duty on unwashed wool and 6 cents a pound on washed. I do not think that would make any great difference to the breeders. We had a fair price for wool two years ago, and we had a very unfair price for wool this year. The best price I got was 8 cents a pound, and how many days hard work can we afford to put in looking after our wool and sell it for 8 cents a pound?

The buyer frankly admitted that it was less than the value in the markets of the world, but, he said, we have all got loaded up with high priced wool from England, and we have got to do something to try and even up; we are therefore paying a very small price for wool this year. How are we going to benefit by putting on a duty of 3 cents a pound? I wonder if anybody can tell me how much duty was collected last year? $6. And how many pounds imported? Eight million pounds. Of course a great portion of that should come under the duty rate, probably about six and a half million pounds, and only $6 collected. The manufacturers are certainly getting the benefit of free wool along that line. A number of the sheep breeders I know are strongly in favor of the Government putting a duty on wool, and I suppose the least they would ask for is 10 cents a pound. I wonder if the manufacturers would be willing to put 10 cents a pound on wool and 10 cents a pound on the imported goods. We have little scoured wool in Canada, and scoured wool could be imported. Would Mr. Wardlaw be willing to put 10 cents a pound on each kind of wool? That is what some sheep breeders are advocating. There is a duty on wool now; it is not enforced and the manufacturers are getting the benefit of free wool. I would like to have it explained, how six millions and a half pounds of wool is imported and only $6 collected. How is it that the manufacturers get such a big haul out of it?

A Member: The Government know the manufacturers could not exist if they collected the duty on wool.

Col. McCrae: To whose hurt is that?

A Member: Probably to the Canadian sheep growers in the beginning; but you must consider what the Canadian sheep growers can continue to grow for many years ahead, and if he had the mills in Canada, he might grow all the wool he possibly could and still be protected for all he could produce. If twenty-one millions of dollars' worth of wool was imported, then twenty-one million dollars' worth of wool would have to be grown here, and the bulk would be grown here, because, the Canadian manufacturers prefer Canadian wools.

Col McCrae: There are a number of wool manufacturers in Canada. It is a prominent industry in Canada. The gentleman who has just spoken

knows very well that manufacturers of this Province use very little Canadian wool.

A MEMBER: Certainly. They cannot, on account of the class of goods that are made. For blankets, or coarse goods, Canadian wool is splendid, but in the knitting (with the exception of a few lines) Canadian wools cannot be used nor can they be used on fine hosiery or cashmere.

Mr. WARDLAW: We have to import for the fine grades, the Australian or New Zealand wools. You take the cross bred Leicester or the Merino and you cannot get any better wool in the world.

A MEMBER: But the manufacturers cannot get enough of it?

Mr. WARDLAW: That is up to the wool growers.

Col. McCRAE: The manufacturers are getting in free their half manufactured tops from fine wool, however, and they have the best of it.

A MEMBER: And the farmer has to suffer?

Mr. GLENDENNING: They generally state that a duty of 3 cents a pound would raise the price of goods to 11 cents. Is that so?

Mr. WARDLAW: I think 6 cents and 9 cents on scoured.

Mr. GLENDENNING: Would the farmer get that extra?

Mr. WARDLAW: Yes.

Mr. GLENDENNING: In what way would the consumer not have to pay it?

Mr. WARDLAW: You can count the mills on the fingers of one hand to-day; mills are shutting down. We have had the hardest fight in the world to get on in Canada. Put a duty on the woollen goods and let them run to their full capacity.

Mr. GLENDENNING: The fellow who wears fine clothes, gets his goods cheaper than the one that wears coarse goods.

Mr. WARDLAW: No; the man who wears fine clothes would have to pay for them. You would make all your goods in Canada; the home competition would keep the price down.

Col. McCRAE: I have been told the Northwest wools were all sold, and now I understand they are still on hand?

Mr. WARDLAW: Advances were made on that 1906 wool, and they could not cover themselves on it.

Col. McCRAE: The wool has not been used?

Mr. WARDLAW: I know that the Northwest wool is being used, and I can specify the mills.

A MEMBER: Will you explain the difference between Northwest wool and Ontario wools?

Col. McCRAE: Mr. Wardlaw explained it by showing that the Northwest wool is not suitable for worsted purposes.

Mr. WARDLAW: That is only in the districts where they are subject to Chinook winds.

Mr. GLENDENNING: How are these North-west sheep bred?

A MEMBER: There are a good many cross-bred, either from the Montana or the Mexican ewes.

Mr. ANDREWS: If all the worsted wools were manufactured in Canada, would not that accomplish the result, and the duty now paid on wools going into the United States would be saved. I would like to read a letter written by a sheep breeder from the North-west, and the reply I gave to him; they are both published in the trade paper. I pointed out many reasons why I consider a duty is not required, and that will give the farmers an opportunity to make sheep breeding possible. The fact of the matter is, that at the present time the woollen mills are in a condition which does not allow them to use the wool, and a large number of them are standing idle. One of the

biggest woollen mills in Canada, at Hespeler, is standing idle, and all over Canada you have others lying idle, and many of our best woollen mills are being turned into knitting mills. If you had woollen mills here that would use Canadian wool it would be a benefit. But on many lines Canadian wool cannot be used to a great advantage, and I would like anybody to point out to me, why a duty would be required on wools, if the proper duty was put on woollen goods.

Q.—How would that duty effect the price of goods?

A.—The probability is the consumer would be required to pay extra 10 or 15 cents a yard. Canadian cloth is now sold so much less than English cloth that the probability is he would not suffer at all. At the present time the Canadian people are prejudiced against Canadian goods and in favor of English.

Mr. Biggar: That question is a very natural one, and the answer to it will make clear to you how illogical our woollen tariff is, and how impossible it will be to develop a really native woollen industry until the whole question is reviewed in the light of modern conditions. Pure wool goes into two classes of fabrics, yarns and cloth produced on the carding machine, and those produced by the combing process from which we derive our worsted yarns and cloths. The wools of Ontario are specially adapted for worsted goods, and the demand for worsted goods is far greater than that for carded wool goods. For example, the mills of the United States consume 157,000,000 pounds of raw wools in the woollen branch, and 261,000,000 pounds in the worsted branch, while the worsted industry of England is even larger in comparison with the wool industry. In Canada we have about 200 woollen mills of all kinds. Many of these are, of course, small mills operating only one or two sets of cards, but out of this total only three are worsted mills. Now if you remember that the United States worsted industry—which has attained such huge dimensions, far outclassing the woollen industry—was built upon Canadian wool, and that for many years practically all the wool used in that industry was imported from this country, and especially from Ontario, you will wonder the worsted business is not carried on here. Col. McCrae has pointed out that although the tariff provides for a duty on wool of a class grown in Canada it is not in force. Only six dollars in duty was collected last year and none this year. But that is not the worst of it. Tops and noils come in free, some kinds of yarns also come in free, and even in worsted yarns when imported for knitting purposes the duty is only 12½ per cent. Now, tops and noils are the first product of the worsted comb, and every pound of such material, which is wool only in the initial stages of manufacture, displaced a pound of Canadian wool. Thus you have the worsted industry strangled in its very beginning by conditions worse than under absolute free trade, because any mill in this branch would have to pay the high wages incidental to protect industries in general, and yet would have to compete with free imports from a country where this industry is specialized to a science. What woollen manufacturer will establish a worsted plant when he can import free of duty the class of tops, noils, and partially spun yarns exactly suited to his requirements? Thus it comes about that several million pounds of these materials, displacing Canadian wool, are brought in every year, while the wool of Ontario, particularly adapted to the worsted trade, has to be shipped to the United States, where it is made up into some of the finest worsted goods in the world. And do not forget that every pound of wool so shipped has to be sold in the United States market under a disadvantage to the Ontario sheep raiser; for owing to the United States duty on raw wool the Canadian exporter must necessarily get from 12 to 15 cents per

pound less than the same wool realizes to the American farmer. I was formerly of the opinion that wool should be free, but a study of the history of the United States woollen tariff convinces me that, if protection is to be applied to a country at all it should be equitably applied. If protection is good for the manufacturer it is also good for the wool grower, and if the woollen industry of Canada is to be a native one in reality, as it was in former days, the protection must begin with the man who raises the sheep. If a duty is put on in favor of the Canadian wool and the tariff raised on manufactured goods to correspond, and to include the worsted trade, which is now the most important branch, the farmer would get a better price for his wool, and a stable industry employing millions of dollars of fresh capital would be built up, with all its benefits to the farmer, merchants and employees, while the general consumer would get a better class of goods at a less price than now, owing to the greater home production.

OUTLOOK FOR THE SWINE INDUSTRY IN ONTARIO.

By G. E. Day, Professor of Animal Husbandry, O.A.C., Guelph.

In the year 1900, according to figures which appear to be reliable, Canada shipped to the various ports of Great Britain the product of 1,169,976 hogs. Ireland sent the product of 410,500 hogs; and Denmark the product of 1,087,000 hogs. In 1907, Canada shipped the product of 803,940 hogs; Ireland, the product of 482,656 hogs; and Denmark the product of 1,767,970 hogs. These few figures bring out the startling fact than in 1907, as compared with 1900, the Irish product increased 17 per cent; the Danish increased 62 per cent; but the Canadian produ t *decreased* 31 per cent. Figures for 1908 are not available, but the indications are that 1908 will make a worse showing than 1907.

If our trade with Great Britain in bacon is not a profitable one, and if the Canadian farmer can use the product of his farm to better advantage than he can in finishing bacon hogs, then this falling off in the export of Canadian bacon may be regarded as a matter for congratulation rather than one to be deplored, but the thoughtful person may be pardoned if he views with some alarm such a marked falling off in a very important industry. The gravity of the situation, and the importance of the industry, may render it not unprofitable to examine our present position more in detail, and, as far as possible, to free our minds from all prejudice while doing so. No doubt there are many causes for the present position of affairs, but we shall confine ourselves to a consideration of some of the principal ones, as follows:

1. *The Financial Disturbance of 1907.* While it is true that the late financial troubles belonged primarily to the United States, it is also true that they had a widespread influence in unsettling the markets of the world, and the bacon trade suffered along with others. It is not necessary to more than mention this factor.

2. *The High Price of Grain and other Produce used in Feeding Hogs.* When the price of grain is high, the farmer is tempted to sell his grain rather than feed it to stock. It is remarkable, however, that the price of feed in Denmark is higher than it is here, and the Danish hog feeder has to buy by far the greater part of feed for his hogs, whereas, the Canadian farmer grows nearly all his own feed. In this matter, the Canadian has an immense advantage over the Dane, and can produce hogs at a much lower

cost; yet the Dane has increased his output, and threatens to drive the Canadian out of the market. It was the matter of high cost of production which led me, in 1904, after a brief visit to Denmark, to conclude that the Dane had probably nearly reached his limit in bacon production. A farmer who could materially increase his output by buying high priced imported feed was an unthought of possibility to me, but I now take off my hat to the Danish farmer and apologize for underestimating his ability.

3. *Distrust of the Packer on the part of the Farmer.* This is the most regrettable feature of the case, and one of the most difficult to handle. It is necessary, however, to touch upon it; because, if we can believe what has appeared in the press, this factor has played an important part in curtailing the output of hogs. That we shall ever have a mutually satisfactory understanding between packers and farmers is scarcely to be hoped for. The whole question is a difficult one to approach from any standpoint, and the man who attempts to pour oil upon the troubled waters is apt to find that the oil becomes explosive as soon as used, and he is liable to damage. It has been suggested quite frequently that packers should pay a uniform price for hogs throughout the year, but the futility of such a proposition can be easily appreciated when we take into consideration that all products and substances which have a market value are subject to fluctuations in value. Even gold and silver are not exempt from this law, and it is beyond the power of man to prevent fluctuation in the price of a marketable commodity. Therefore, so long as hogs are fed for market, so long will there be variations in their market price. Until some more practicable scheme for bridging the gulf between farmer and packer is evolved, the matter may well be left in abeyance.

Let us now turn our attention to some of the things which have made for the success of the bacon industry in Denmark, for they are well worthy of consideration. Following are some of these factors:

1. Denmark has escaped much of this disastrous friction between farmer and packer through her co-operative packing houses, in the establishment of which she has had a much happier experience than we have had in this country. Private enterprise in the packing business is not by any means unknown in Denmark, but there are enough strong co-operative concerns to establish the farmer's confidence in the business. The co-operative principle has also practically elimated the necessity for the middleman.

2. The country is small and the factories numerous, so that long railway hauls are unnecessary. The Dane is also near the British market, and all these things tend to keep down the expense account.

3. To create and hold a market, two things are especially important: there should be reasonable regularity of supply, and uniformity of quality in the product. The Dane seems to fully appreciate this fact, and he aims to be in the market at all times so that his customers may not be disappointed and look elsewhere; and the uniformity in the quality of his product has given his goods an enviable reputation, so that Danish bacon commands a substantial premium over other brands.

4. Denmark is a butter-making country, and the feeding of hogs is found to be a profitable means of utilizing skim-milk and butter-milk. The extension of dairying in Denmark is no doubt responsible for the increase in bacon production, and whether the Dane has yet reached his limit in the production of bacon, depends entirely upon whether he has reached his limit in dairying.

5. The Danish government, the press, the packer, and the farmer are all working in harmony for the promotion of the industry.

There may be other reasons for Denmark's supremacy in bacon production, but sufficient have been cited to give a clear idea of the difference between Canadian and Danish conditions, and this brings us to the most difficult point: what of the future?

Though there has been of late a marked decrease in our export trade, there has been an increase in our home market. It is impossible to obtain figures relating to this increase, but the opening up of our western country has created an important market for eastern bacon. It is not safe, however, to rely upon the permanence of this market, because it seems only reasonable to suppose that as time goes on the west will produce hogs in increasing numbers. In the meantime, the western consumer is of great importance to us, and will probably help us over some difficult places, but we cannot afford to lose sight of the English market.

There seems to be no good reason why we should turn over the British market to the Dane. We grant that he has certain important advantages, but we have an immense advantage in the matter of cost of production, and we could drive the Dane out of the British market if we went about it the right way. It would mean more careful attention to the details of feeding, and more care in the selection of our breeding hogs. The Dane has learned to supply his customer with what he wants. When we learn the same lesson, Canada can once more assert her supremacy in the British market.

The extension of dairying in this country, is working in the interests of the bacon industry. There is probably no animal which can make better use of dairy by-products than the hog, and there is probably no satisfactory substitute for skim-milk and butter-milk in hog feeding. It looks, therefore, as though in Canada, as in Denmark, our production of bacon will be governed by the extent of our dairying operations.

The chances are that, to say the least, it will be a long time before we have successful co-operative packing houses in this country, so that, in the meantime, we had better look carefully into conditions which prevail at present, and which are likely to prevail for some time to come, with a view to deciding what is the wise thing to do. Feeding bacon hogs either pays, or it does not pay. If it is only a moderately profitable adjunct to our business, we had better foster it and try to improve it, for profitable branches of agriculture are not so numerous that we can afford to treat them lightly. If it is wholly unprofitable, then we had better discard it, but before deciding upon such a serious step, we should have conclusive evidence that we are right. Undoubtedly, some men have found bacon hog feeding unprofitable, and have wisely decided to drop out of the business; but it does not follow that one man's experience should be the same as that of his neighbor, and we have ample evidence that other men have found the business to be very profitable indeed. Let us face this problem with open minds, and let us be very sure that the hog is unprofitable for our conditions before we decide to discard him. The hog is generally carried most profitably as an adjunct to other farm operations—as a sort of side line, if you like the term better—and fills this capacity most successfully upon a dairy farm, especially where butter-making is the specialty. On other farms, we find him in smaller numbers, consuming odds and ends of refuse which would otherwise be wasted, and turning them to good account, along with a certain amount of food which has a market value. The man who loses money on hogs is usually the man who overstocks his premises, and attempts to keep hogs under circumstances which make success impossible. What is needed to-day is a wise conservatism in regard to the hog industry, careful comparisons of the profits

from hog raising with those from other branches of our business, and careful study of methods likely to reduce the cost of production.

There seems to be no doubt that the bacon hog has come to stay. Apart from the British market, there is an ever widening home demand for lean meat which the bacon hog alone can fill. If we drop the bacon hog at this critical juncture, we may expect to see the swine industry shrink to a much greater extent than it has shrunk already, unless some unforeseen circumstance opens up a fresh outlet for our surplus product. The farmers of this Province have already sacrificed millions of dollars through lack of uniformity in the product they have sent to Great Britain. Shall the next step we take be backward or forward? This is the question the farmer must answer for himself, according to the dictates of his own judgment.

When we come to sum up the whole matter, we find that of late we have suffered a set back in the British market, and that our principal competitors have made a large stride forward during the same time.

The conditions which prevail in connection with the marketing of our hogs, are likely to continue for an extended period at least.

The question for the farmer to answer is: "Can I afford to dispense with the hog?"

If he answers this question in the negative, there is still another one to face, namely: "Shall I feed the hog which fills the demand of the consumer, or shall I tamper with the hog which has caused our bacon to be sold at a discount upon the British market?"

This is a free country. Every man has a right to feed any kind of hog which pleases his fancy. It is just as well, however, to make sure that the course we are following is the one which will eventually prove to be in our own best interests.

ALFALFA GROWING IN ONTARIO.

By C. A. Zavitz, Professor of Field Husbandry, Agricultural College, Guelph.

There is probably no one crop in which a greater interest is being taken by the farmers of Ontario at the present time than Alfalfa. Although it has been grown more or less throughout the Province for many years, it is only recently that farmers, generally, are realizing the value of this crop, where it can be grown successfully. Experiments with Alfalfa have been conducted at the Ontario Agricultural College for about eighteen years, and co-operative tests have been made throughout Ontario with seed distributed through the medium of the Experimental Union in each of at least a dozen years. From the results of these various experiments, as well as the practical experience of farmers who have been growing Alfalfa in a larger way, we have been enabled to glean some valuable information. We find that in some instances Alfalfa does exceptionally well, and in others it proves an utter failure. The farmer who has suitable land for the growing of this crop is enabled to secure excellent returns. As Alfalfa is an exceedingly deep rooted plant, it does not thrive well on a soil which requires underdraining, but when good seed is properly sown on land which is either naturally or artificially well underdrained, it will frequently give magnificient returns for a number of years.

Alfalfa as Feed: Alfalfa, or Lucerne as it is frequently called, furnishes food of high feeding quality. There is probably no crop grown on the

farms of Ontario which is more nutritive than Alfalfa when it is carefully grown and properly cured. The amounts of digestible food constituents and the nutritive ratios of Red Clover and Wheat Bran, as compared with those of Alfalfa, are here presented and are worthy of attention.

Varieties.	Protein.	Carbohydrates.	Nutritive Ratio.
Red Clover	6.4	38.5	1 : 6.0
Alfalfa	10.4	43.0	1 : 4.1
Wheat Bran	12.0	45.4	1 : 3.8

It will be seen from the foregoing figures that Alfalfa contains a greater percentage of digestible protein and of digestible carbohydrates, and has a narrower nutritive ratio than Red Clover. It will also be seen that the difference between Alfalfa and Wheat Bran is much closer than one would imagine.

Elements of Fertility in Alfalfa: Alfalfa is probably one of the easiest crops which can be grown on the land. It attains a large proportion of its nitrogen from the air and of its mineral matter from the subsoil. In these two respects it differs almost entirely from our cereals and our root crops. According to chemical analyses, the fertilizing elements in one ton of average Alfalfa is worth as follows: Nitrogen, $5.25; Phosphoric Acid, 41c.; and Potash, $1.68, making a total of $7.34. As these valuable fertilizing constituents have been largely derived from the air and the subsoil, it will be seen that the growing of Alfalfa is exceedingly easy on the surface soil. When the crop is fed to animals and all the manure is carefully maintained, it is considered that from 75 to 90 per cent. of the fertility of the crop can be returned to the land in the form of manure.

From practical experiments conducted at the College, it has been found that after the Alfalfa crop has been removed from the land and the sod has been plowed and sown with winter wheat, barley or corn, that the results are very much better than those obtained from Timothy sod, when treated in exactly the same way.

Mechanical Influence on the Soil: Not only does the Alfalfa crop prove of great value in regard to the fertility of the soil, but it also has an excellent influence on the land from a physical standpoint. From experiments which have been made at Guelph, the inverted Alfalfa sod was found to be exceedingly loose and mellow and in an excellent condition for future crops, while that of Timothy, Meadow Fescue, and Orchard Grass was much less friable.

The Place of Alfalfa on the Farm: As Alfalfa does not reach its full development until the third year after it is sown, it is considered to be less suitable for short rotations in Ontario than the Common Red Clover. For various reasons, however, there are certain fields which many farmers do not wish to bring into their regular rotation. Frequently some of the fields are along hillsides or are unsuitable for grain growing where frequent seedings are necessary. In many instances the farmers are devoting their attention largely to live stock, and are desirous of having more permanent crops for pasture and for hay, with smaller proportions of the farms devoted to the short rotations. The Alfalfa is proving a most valuable crop for instances such as these, and others which might be mentioned.

USES OF THE CROP: The green fodder produced by Alfalfa is both nourishing and appetizing. It is often an advantage to start to cut Alfalfa for green fodder some time before it has started to bloom. The portion of the crop which cannot be used for this purpose before one-third of the blossoms have made their appearance should be cut and cured into hay. The fact that Alfalfa is a perennial plant, as well as the fact that it produces two, three or four cuttings in the one season, makes it a very desirable crop to use for the production of green fodder for feeding to farm stock.

For the production of hay it is a most valuable crop. Under favorable conditions it produces large yields of hay of excellent quality. Very great care, however, should be taken to cut the Alfalfa just as it is starting to come into blossom, and always before it is more than one-third in bloom, as the crop very rapidly depreciates in digestibility after it has reached the stage of maturity referred to above. Great care should also be taken to not allow the Alfalfa to lie very long in the hot, dry sunshine, as the leaves soon become crisp and are easily broken from the plants. As the leaves are the richest part of the Alfalfa, special care should be exerted to have as few as possible lost. After the crop becomes sufficiently wilted it should be raked into winrows, and the curing process should be finished in the winrows or in the cocks.

In the average results of experiments conducted at the College in four different years, Alfalfa, when grown alone, gave a greater yield of pasture per acre than any one of the following crops: Common Red Clover, Mammoth Clover, Alsike Clover, White Clover, Yellow Trefoil, Sainfoin, or Burnet. When grown and pastured alone, however, there seems to be even a little greater risk of cattle and sheep becoming bloated when pasturing on Alfalfa than when pasturing on clover. There is also a danger of either cattle or sheep eating the Alfalfa so closely to the ground that they are apt to injure the crowns of the roots, and in some cases entirely kill the plants. Some very excellent results have been obtained from pasturing hogs and poultry on Alfalfa.

The writer has never heard of injurious results from bloating with any kind of farm stock pasturing on Alfalfa, providing it is used in combination with grasses and clovers in the form of a permanent pasture.

In each of five or six years, seed has been produced at the College from either the first or the second cuttings of Alfalfa. The results have been about the same from each cutting. The production of seed has been only fairly satisfactory at the College, but in some parts of Ontario Alfalfa seed growing is becoming an important industry.

No extensive experimental work has been conducted at the College in the production of Alfalfa silage, but a few reports have been received, stating that the crop can be used in that way with fair satisfaction.

Alfalfa certainly produces a large amount of exceedingly valuable material to use as a green manure. In the majority of cases, however, it is probably better to use the crop for feeding purposes, and then to save the manure and return it to the land in that form rather than to plow under the whole crop.

It is quite probable that there are many crops more suitable for using as a cover crop in orchards than Alfalfa. The growth of the plants is upright and rather open, and the roots penetrate so deeply into the soil that they tend to rob the subsoil of its fertility and of its moisture, both of which are so essential to the best welfare of the trees.

SOIL CONDITIONS SUITABLE FOR ALFALFA: It is practically useless to attempt to grow Alfalfa on a cold, wet soil. The crop usually thrives well,

on almost any kind of a fertile surface soil, providing the subsoil is sufficiently open to allow the roots of the plants to penetrate through the moist soil before reaching the water-level.

It is also of great importance that the surface soil be thoroughly cultivated and free from weeds and weed seeds before the Alfalfa seed is sown. If the land is suitable, Alfalfa can usually be grown with much success in Ontario, providing the land is properly prepared and good seed is sown in the best way.

Directions for Growing Alfalfa: There are different ways of laying down a field to Alfalfa, and we would suggest the following method as one which is likely to give very excellent results. Select land having a clean, mellow, fertile surface soil overlying a deeply drained subsoil having no acidity. Use large, plump seed, free from impurities and strong in germinating power. Inoculate the seed with the proper kind of bacteria, providing Alfalfa has not been grown successfully on the land in recent years. As early in the spring as the land is dry enough and warm enough to be worked to good advantage, make a suitable seed-bed and immediately sow about twenty pounds of Alfalfa seed per acre from the grass seed box placed in front of the grain drill, and about one bushel of spring wheat or of barley per acre from the tubes of the drill. Smooth the land with a light harrow or with a weeder, and if it is very loose and rather dry, also roll it and again go over it with the harrow or the weeder. As soon as ripe, cut the grain and avoid leaving it on the land longer than necessary. Give the Alfalfa plants every opportunity to get a good start in the autumn in preparation for the winter. If for hay, cut each crop of Alfalfa in the following year as soon as it starts to bloom. In curing, try to retain as many of the leaves on the stems as possible, and to protect the crop from rain. Never cut or pasture Alfalfa sufficiently close to the ground to remove the crowns of the roots, and thus injure or possibly kill the plants. If these directions are followed, the Alfalfa may be expected to produce large and valuable crops for a number of years without re-seeding.

Henry Glendinning, of Manilla, pointed out that it was entirely undesirable to allow stock to run on the Alfalfa field, because the animals eat it off close and in many cases pulled out the crown of the plant, thus weakening the stand. His early experience was a fair crop the first season, but failure the second season. Since he quit pasturing, reasonable success had attended his efforts, and although the second season's crop generally was the weakest it was quite satisfactory. The general practice was to seed to Alfalfa on land that had been in roots the previous season. He did not consider the ordinary mowing machine the best implement that could be made for cutting Alfalfa because the leaves and blossoms instead of the sappy stems were left exposed to the sun. Since no satisfactory implement was available the next best thing was the free use of the hay tedder with which he preferred to run over the fresh hay twice the day it was cut. After cutting in the morning when the dew was gone and giving two such treatments as here described, it was ready to be coiled that evening. Then it was left in the coil until about ready to come in the barn, when the coil was upset so that the base could become well aired. For second and third cuttings it was not necessary to use the tedder so freely because of thinner stands and less sap at the seasons of these cuttings.

Q.—What bulk do you consider a good crop?

A.—About five or six tons per acre per year.

Q.—Is there not great loss of time cutting the same ground so often and hauling the hay to the barn?

A.—I do not mind spending time when I get results. I can grow Alfalfa at a cost of $2 per ton.

THOMPSON LAWSON, of Hamilton, said that Alfalfa had been grown for seed successfully in the Niagara District. In so doing two cuttings of hay were lost. A paying crop averaged two to two and one-half bushels per acre, but he had seen as high as five bushels per acre. It was necessary to keep all weeds out of the growing crop, as many of the worst weed seeds could not be removed from the threshed seed by machinery.

Q.—Will it pay a man to grow his own seed instead of buying it from seedsmen?

A.—I have known as low as one-half bushel to the acre to be threshed. In this case it did not pay as the two extra cuttings of hay would be worth more than that yield of seed.

Q.—How does the production of seed affect the crop the following year?

A.—It has no injurious effect. The crop comes on the following season as strong as ever.

WEEDS, THEIR IDENTIFICATION AND CONTROL.

BY GEORGE H. CLARK, SEED COMMISSIONER, DEPARTMENT OF AGRICULTURE, OTTAWA.

Let me commence by adding another quota of congratulations to the exhibitors in the seed department and to the management of this winter fair, because of the excellence in quality and attractiveness of the exhibits of seed grain and other seeds. It is certainly encouraging to those of us who have made some effort to suppress the general distribution of noxious weeds and to improve the seed supply, to find here on exhibition such numerous representative lots of thoroughly good clean grain of the best kinds. I am advised that each exhibit in the special class that grew out of the field competitions that were conducted in the Province of Ontario during the past year—each exhibit of two bushels could be taken as fairly representative of several hundred bushels of equally clean grain that is held for sale. With the information respecting these supplies at hand, we will not expect to have this year, as in past years, those statements from some seed merchants, given as an excuse for violating the provisions of the Seed Control Act, that they are unable to procure supplies of clean seed. With the information I have obtained to-day concerning the supplies and the quantity available for seed. I shall be able, through our staff of seed inspectors, effectively to reply before the court to such appeals for special consideration. These field competitions, which have been organized during the past two seasons by the Provincial Department of Agriculture for Ontario, and assisted by the Seed Branch of our Dominion Department, will, if continued from year to year, prove to be one of the most potent factors in agricultural education looking to better crops and cleaner farms. From the information supplied by the judges who were sent out by the Seed Branch to award the prizes in those competitions for the various agricultural societies, it is clear that weed growth has greatly increased during the past ten years, which have been expensive years for farm labor. The cost for labor in fighting weed pests has grown to be a serious problem in farm management. The observation made by the judges made clear too that a large proportion of the farmers of Ontario continue to be slaves to routine in farm operations as practised by their grandfathers.

This routine is one of the greatest enemies to the farmer, because he is absolutely unable to cope with the present-day weed, insect and fungous pests unless his system of farming shall include the arrangement and rotations of crops best suited to their suppression and extermination.

The older men in this audience will, I have, no doubt, remember their introduction to the first weeds which gave trouble in the province of Ontario. They will remember that on newly cleared land, sown with wheat, they did not harvest a crop of mustard or Canada Thistle. During the past fifty years new kinds of weeds have been added; rather slowly at first but more rapidly as transportation facilities have developed. But at no time has the wholesale distribution of weeds gone on in the province of Ontario to such an alarming extent as during the past decade.

The trade in agricultural seeds has been blamed for much, and was found guilty of being the means of a general distribution of many kinds of noxious weed seeds. But the worst evils of the seed trade have, in a large measure, been corrected. We have, nevertheless, many and continued appeals from farmers and agricultural organizations for a further tightening of the rope on this source of weed distribution. Perhaps the time is now ripe when further adjustments of the grades of agricultural seeds can be made to advantage; but it seems to me to be rather unfair to expect that the hands of one class of business men should be completely tied, while another class of business men or farmers, who are now doing greater injury to Ontario agriculture, are allowed to go Scot free. And that leads me to make some observations concerning the condition in respect to weed seeds of the so-called feeding stuffs or feed grain, that are transported and sold for the purpose of feeding over the province of Ontario. We have found that many of the flour mills in the province of Ontario pipe the screenings from their cleaning plants directly into the bran bin. Others keep them apart for crushing or grinding with grain for feeding stuffs. It is entirely practicable for any miller to so separate the small from the large weed seeds before grinding that the process of manufacture into ground feed stuffs will destroy the vitality of all seeds contained therein. But it is rare indeed to find any such feeding stuffs put on the market in the province that do not contain vital seeds of some of our most noxious weeds.

A special source of danger to the province of Ontario is the screenings and ground feeding stuffs which have been coming forward from the cleaning plants at Port Arthur. It is only a few years ago now since an amendment to the Manitoba Grain Inspection Act authorized the chief inspector of grain to mark on the certificate of inspection Grade 2, clean six per cent. rather than otherwise to give it a lower grade. Such a car is cleaned at Port Arthur before being binned in the elevator. The screenings removed therefrom become the property of the cleaning plant, and in the course of a year many hundreds of tons of such cleanings are accumulated. Such seeds as wild buckwheat, lamb's quarters, wild oats, and many other kinds of weed seeds, have a feeding value, and the necessary machinery for grading and grinding those screenings has been installed. Millers throughout the province also obtain carlots of the unground screenings, which come forward to them all rail and are crushed or ground with coarser grains, and offered for sale as feeding stuffs. These cleaning plants have their travelling agents, disposing of their accumulated supplies of screenings, either whole or in the ground state. More than one-half of the one hundred weeds which I have to show you from lantern slides, made in their natural color, have been introduced into Ontario from the western provinces, and largely, I believe, through this trade in feeding stuffs, which has largely increased, so far as

Port Arthur and Fort William are concerned, during the past eight years. This particular source of evil is peculiar to the province of Ontario. The cost for freight leaves the province of Ontario—or, at least, points west of Montreal—the most desirable market. It is my conviction that this evil can not be effectively corrected by Federal legislation, because whatever legislation is made by our Dominion Parliament must be applied alike in the province of Ontario and in the western provinces where those weed seeds are produced. The provinces of Manitoba, Saskatchewan and Alberta have enacted legislation to cope with these nd kindred evils which are peculiar to those provinces.

I would also remind the farmers of Ontario who occasionally appeal for a more stringent Seed Control Act that it is the privilege of any fifty farmers, by petition, to require their municipal governing body to appoint an inspector of weeds and enforce the suppression of noxious weeds within the municipality. There are indeed very few municipalities in the province of Ontario which employ weed inspectors, and in that way put into operation the laws enacted by the Provincial Legislature. I am inclined to the opinion that the best interests of all concerned would be well served if the province of Ontario would enact a law, making it compulsory on the part of the municipal governing bodies to each year name at least five and not more than fifteen of the most noxious weeds in the municipality, and appoint and maintain an inspector of weeds who would look after their destruction.

I have named three main sources of noxious weed distribution, all of which are known to seriously pollute our farm lands, namely, the seed trade, the trade in feeding stuffs and feed grain, and local distribution by natural agencies. The worst evils of the seed trade have quite largely corrected. An adjustment of the grading of grass and clover seeds may be made, but higher standards of quality in those grades may not be practicable until restriction has been applied to these two other sources of noxious weed dissemination.

There are several ways of classifying weeds. They may be classed according to their manner of natural distribution. We speak of weeds which are distributed in time and weeds which are distributed in place. Those weeds, the seeds of which when mature drop to the ground near the plant, usually possess a seed coat which is partly impervious to water, a seed coat which will preserve the vitality of the seed for several years. From an examination of a large number of samples of soil, we find that on land that has received good cultivation, land that is under a short rotation of crops, a square foot of the average soil, taken furrow depth, would contain not more than, approximately, two hundred of such weed seeds. Other lands which are sometimes said to be foul with noxious weeds would contain as many as fifty thousand of such weed seeds in a square foot of soil furrow depth. When such weed seeds come within an inch, more or less, of the surface, they will germinate and produce plants, even after many years. We call these weeds which are distributed in time. In dealing with such weeds the principle must be, to adopt a system of cultivation so that these weed seeds in the soil may be brought to the surface soil and germinated, and, after germination, the plant may be conveniently destroyed before it has had time to produce a new crop of seeds.

Other weed seeds when ripe possess a pappus or downy structure attached to the seed—as the Canada Thistle, which is familiar to all farmers—by which the seed is carried for long distances by the wind. As a rule, seeds of this kind are short-lived. Most of them have not that protective covering common to the mustard seeds. We call them weeds which are distributed in

space. But there is another class which may be distributed both in time and space—in time through being perennial and having underground root stocks, and through space by the weed seeds which are carried long distances by the wind. The perennial sow thistle is a good example of this, and is one of our most noxious weeds. Another means of classifying weeds is by the terms annual, biennial and perennial, according to their length of life after the seed has germinated. Annual weeds mature their seeds and the plant dies within a year from the germination of the seed which gave it life. Biennial plants spend the first season in growth of leaf and root, and produce their crop of seeds only during the second season, after which the mother plant dies. A perennial plant will live for several years, continuing to reproduce annually.

Of the one hundred stereopticon views which I have to show you, illustrating as many weeds which are known to have been introduced in the province of Ontario, probably not more than twenty or twenty-five of them would be classed as seriously noxious weeds. Others are of secondary importance. A great many of them will be entirely unfamiliar to Ontario farmers because they have only recently been brought into Ontario and are not yet generally distributed. Many of these weeds have proven to be seriously noxious pests in the western provinces or in other countries; but that is not to say that they will prove to be pernicious weeds in Ontario. In any case, it would be well for the farmer to claim the benefit of the doubt and exterminate them before they have an opportunity to increase and show whether they are likely to become seriously noxious. I regret that it will not be practicable to have all of these weeds reproduced in the press in their natural color, as I am fortunately able to present them this evening by stereopticon views; but I am pleased to be able to announce that more than half of these weeds are illustrated in the book, "Farm Weeds of Canada," copy of which is now available to all farmers in Canada through the libraries of their rural schools. I am also glad to be able to intimate that a revised and enlarged edition of that book, which will contain 76 colored plates of these weeds is in course of preparation. This book will be issued by our Department of Agriculture at considerable cost, and, when completed, will, I anticipate, be made available to individual farmers of Canada at a nominal charge. I do not approve, and I know that the Honorable the Minister of Agriculture does not altogether approve, the principle of requiring farmers to contribute in that way something toward the expense of publishing information which should be made available to them free of cost; but from our experience in distributing the first edition, which has gone almost entirely to the public institutions of Canada, I have no hope of being able to satisfy the demands of our Canadian people in the free distribution of this publication that is expected to cost about $1.40 per copy, which large cost is almost entirely due to the expense of illustrating these weeds in their natural colors.

SEED EXHIBITS.

By J. Buchanan, B.S.A., O. A. C., Guelph.

I am very glad to have the opportunity to say a few words in regard to the seed division of the Provincial Winter Fair. For three years I have had the task of judging all of the seeds and potatoes, excepting the special class of white oats which Prof. Klinck and his brother judged this year,

and I am pleased to be able to report marked improvement in the quality of the exhibits.

I was not aware of the fact, until Prof. Klinck mentioned it a few minutes ago, that he had awarded first prize to an exhibit "New Sensation" oats in the large special class which he judged. It will be interesting for you to know that both first and second prizes went to exhibits of the same variety (Sensation) in the class for white oats in the regular exhibition. There were eighteen exhibits in this class, and there were so many good ones that it took some time to select the winners: then, on looking up the names of the varieties, after having made the awards, I found that both first and second prize lots were of the "New Sensation" variety.

Now, let us consider the seed exhibition for a few minutes, first from the standpoint of the exhibitors and afterwards from the standpoint of the exhibition authorities. From year to year the exhibitors are improving the quality of the seeds which they place on exhibition, and this year there were very few, if any, discreditable exhibits. Many of them were excellent in quality, and one lot of white peas was so good that I would find no fault with it. Had there been another one as good, I think it would have been necessary to award two first prizes. This lot looked as if each pea had been measured in order get them all of exactly the same size, and I could not find a weevily nor a wormy pea, nor a broken or discolored pea in the bag, no matter how far I put my hand down into it. The only thing I found in the bag, that should not have been there, was a small metal nut from the end of a bolt. The hole in that nut was just about the same size as the peas, and I wondered whether the exhibitor had used the nut as a measure and had pushed each pea through the hole in order to get them of uniform size. This man, and many others, deserve much credit for having carefully prepared their exhibits of seed grain. It may, therefore, be said that, from the exhibitors' standpoint, the seed division of the fair is making good progress.

This year those in charge arranged to have the seed exhibits placed on the ground floor of the building in a location where they attracted much more attention than in previous years, and I think it is correct to say that for the first time the seed section is a really important part of the Winter Fair. This was a step in the right direction, but there is still room for improvement. The seed grain is still exhibited in open bags which are set aside by side, and as a result the samples get badly mixed when they are being examined by visitors. A man will pick up a handful of grains to look it over, and when he throws it back, part of it will drop in another bag. Now these samples are of considerable value to the exhibitors, and when they are thus mixed their value is practically lost. I would therefore suggest that the exhibition authorities appoint a committee to thoroughly discuss the matter, and to draft out a first-class method of arranging the seed exhibits so that they could be seen to good advantage and yet not be handled or mixed. It seems to me that uniform boxes or cans could be constructed of suitable size to hold the regulation amount of grain, and covered with close fitting wire netting tops. This is simply a suggestion, but I think the whole matter might be dealt with by a competent committee and some further improvement made before the next exhibition is held.

REPORTS OF JUDGES ON POULTRY EXHIBITS AT THE ONTARIO PROVINCIAL WINTER FAIR, 1908.

By Jas. A. Tucker, Concord, Mich.

The Wyandotte classes at the great Guelph show contained some of the best birds I ever judged. Whites come first; 1st, cock one of the best, if not the best, I ever handled, every curve a Wyandotte, good in head points and white, an easy winner, looks like first winner a year ago; 2nd, not so good in shape, but an easy second; 3rd, a white bird and finished, wins out over several good birds on account of being finished. Balance of winners good ones, but hard to judge on account of plumage being out in wings and tails. Hens,—a nice class, but several good birds not ripe in plumage; 1st, a grand bird in shape, just a little too tight in feather; 2nd, we think a better bird when in full plumage; 3rd, a Wyandotte in shape, but set back on account of ticking in plumage; 4th, a good one when farther along; 5th, a big one and wins on color, more a Cochin shape in back; balance of class good birds and could win in most shows. Cockerels a grand bunch; 1st, about the best I ever handled, a Wyandotte from head to foot and white as they make them; 2nd, some good type but not as good in back and tail shape, white as snow; 3rd, a grand shaped bird, but not quite ripe in plumage; 4th and 5th, good in Wyandotte type, but hardly finished; balance of class contains many good birds that will win in good company in January shows. Pullets a great lot; 1st. 2nd and 3rd look quite a bit alike. We like first pullet best, as we consider her better in back and tail shape; 4th and 5th could win in most shows, the class as a whole about the best I ever handled. Silver Laced Cocks,—some of the best laced breasts and bodies I ever saw. Equal to Sebrights. The first cock was sounder in neck, back and flights. The Silver also lacked Wyandotte shape. First hen a very nice laced one but bad in hackle, too dark at lower end of hackle; balance of winners could win in most shows. Two very nice hens left out on account of very bad combs. Cockerels,—very poor in shape; 1st a very nice, clean bird, but stands a little high, may settle and make a good cock; 2nd, a big bird, good breast and body color, tail carried too high; 3rd and 4th, pretty good ones, but hardly finished. Pullets,—some very nice colored ones, but too long in body and back. The winners were good clean, colored ones with good combs but lack Wyandotte type. The winning cock in Golden is a good one, rich in color and quite a fair comb and good in shape; 2nd, not quite as good in comb nor sound in color; 3rd and 4th, good birds, but off in color and shape to first and second. 1st hen, one of the best we ever handled, good size and shape, and very clean in color; 2nd, another good one but smaller; same might be said of 3rd and 4th. 1st Cockerel in Golden wins out in shape and head points; some nice laced breasts and bodies, but balance of winners set back on combs and color of flights. Pullets,—some very nice ones; 1st, a nice clean colored one, with good comb and fairly good shape; balance of winners very good. Buff Wyandotte cocks; 1st, one of the soundest and best colored birds I ever handled, was an easy winner; 2nd, another good one; 3rd, a little smaller, but nice shape, a little darker than first; 4th, a very good one, but not as sound in color or good in shape as 2nd and 3rd. Hens,—1st, an easy winner, good Wyandotte type and even in color; 2nd and 3rd, good sound color, but not Wyandotte in shape; balance of class pretty good birds. Cockerels,—best shaped bird in class was 3rd, he had a very large coarse comb, and we sent him back. 1st, quite a good bird but hardly old enough, same is 2nd, will

be bettter in January shows. Pullets were a nice even colored lot, but lack Wyandotte back and body. Blacks,—1st cock wins easy as he was in fine condition, good Wyandotte shape and good in color; 2nd, wins from 3rd in shape; 3rd, a very nice colored bird. Hens,—1st, wins over balance of class in shape and soundness of color. 1st Cockerel, quite a promising bird; 2nd and 3rd, good. Pullets,—one of the best in shape, was disqualified for a white feather in wing, was sorry to have to do it, but it is the law. Several Blacks with yellow shanks and good shape were shown but they were very white in under color. Silver Pencilled,—a small class, quality not as good as in other classes; 1st and 2nd cocks were very nice top colored birds, but failed in flights and under color of hackle and saddle. 1st and 2nd Cockerels, also 1st and 2nd hens, good birds; pullets not good ones. Columbians,—1st and 2nd cocks were good in Black and White, a little coarse in comb; 2nd cock is bad on wing; one of the best in class was disqualified for stubs in shanks. 1st hen, an easy winner; 2nd, a good one; 3rd, also a good one; 4th, good shape, but too light in hackle, wing and tail. Best cockerel in class was disqualified for stubs in shanks. First cockerel carries a good hackle, good wing and nice tail; 2nd, not quite as clean in color; 3rd and 4th, good type, but a little creamy in color, will make good breeders as they were good in shape. Pullets,—quite a good lot; 1st, wins in size, shape and color. One of winners was best in hackle, wing and tail I ever saw. 1st hen and 1st cockerel and winning pullets were the attraction in this class.

Rose Comb White Leghorns: Not a very strong class. Winning cock, hen, cockerel and pullet above the average. Some good birds in this class that were not through the moult, plumage not right.

S. C. Rhode Island Reds: Cocks, 1st, an exceptionally good one, good head, quite sound in color and very good shape; 2nd, close up to 1st; 1st hen an easy winner, about best red hen I even handled, she was a hen, too, I have found several red pullets entered as hens, 2nd hen a good one if first was away, balance fair, 1st cockerel, nice head, good sound color, too flat in breast and narrow in body; 2nd, a nice bird, a little uneven in surface color, but sound under; 3rd, close up to 2nd, 4th and 5th fail in under color, several nice shaped birds go to pieces in color. 1st pullet a nice red, good type and very sound; 2nd, close up to first; 3rd and 4th, both good ones; balance of class contained a few good ones. Rose combs not a very large class; 1st and 2nd cocks not far enough along in moult to be at their best, but win out in shape and soundness of color; 1st hen an easy winner; 2nd, a good hen, but not rich enough in color; 3rd and 4th, not in it with first and second. 1st cockerel an easy winner, sound in color and very good in shape; balance of class lack color. 1st pullet a dandy, about equal to 1st single comb; 2nd, close up to first; 3rd and 4th, good birds, above the average.

By R. Oke, London.

Buff Orpingtons: Cocks,—1, a good one, good color, little coarse in head; 2, has better comb, fails trifle in size; nice level color, good legs and feet; 3, fails little in size and lacks breast, good color; 4, good but out of color. Hens,—1, a grand one, absolutely clean tail, great color all through; 2, good type, trifle light in color, shows little shafting; 3, light color, but level, fair type; 4, big, little mealy, good legs and feet. Cockerels.—1, big, nice shape, good color, black, nice legs and feet; 2, about same type, bit higher color, not as good comb; 3, fails bit in shape of

breast, good color; 4, fails in size, somewhat chestnut in color, and trifle narrow. Pullets,—1, nice color, neat head, fails little in shape of breast; 2, good one, little peppery in tail; 3, trifle coarse in comb, not as good surface color, clean tail; 4, good color, fails little in front and shape of breast, bit narrow at saddle.

S. C. White Leghorns: Cocks,—1, great comb, head and lobe, good shape of neck, bit sappy in color; 2, heavier comb and lobe, better finished and whiter, fails to one on shape; 3, good shape and color, but gone in face, bit pinched in tail. Hens,—1, neat comb, fair lobe, good shape on neck and back, but bit pinched in tail; 2, neat head, nice color throughout, little low on legs; 3, fails little in shape, good color, nice tail, but carried trifle high. Cockerels,—1, a grand one, elegant head piece, good eye, nice tail, good legs and feet; 2, fails to first on comb and lobe, lacks finish, but a good one; 3, not quite as good in comb or lobe, but a nice one; 4, bit rough in comb; 5, also a good one, will yet surpass 4. Pullets,—1, good head, eye, comb, wattle, fails trifle in lobe, good legs and feet; 2, close up, hardly so clean in lobe, little more pinched in tail, otherwise a good one; 3, good, carries tail bit high, lacks color of beak and legs; 4, coarse in comb.

Black Leghorns: Cocks,—1, trifle heavy comb, good color and condition, little high in tail; 2, not as heavy in comb, fails in lobe, and not so rich a color. Hens,—1, good shape, trifle coarse in comb, good plumage, good legs and feet; 2, better legs, not as good in under color in tail; 3, fails shape and comb, bit pinched in tail, legs and feet good. Cockerels,—1, good shape little heavy in comb, good carriage tail, fails color, legs and feet; 2, trifle high tail, heavy in comb and not as good color; 3, also heavy in comb. Pullets,—1, neat comb; nice shape and top color, trifle off on legs, a good one; 2, neat comb, good color, fails in leg color; 3, little heavy comb, trifle coarse throughout.

R. C. Brown Leghorns: Cocks,—1, rough comb, otherwise a good one, good color, hackle and saddle; 2, off on comb, good color, close to 1; 3, a good one not up to 1 and 2. Hens,—1, fair comb, good hackle and back, shows a little shafting in wing; 2, fails to 1 on head and neck, color trifle dark; 3, fair head, bit foxy in wing. Cockerels,—1, fair comb, good head, eye, neck, saddle and wing color; 2, another nice one, fails color of saddle; 3, nice comb, good color, fails trifle in saddle striping. Pullets,—1, nice comb and lobe, very even surface color, trifle light; 2, close up, not so mature; 3, rougher in comb, good color breast, fair top color.

S. C. Brown Leghorns: Cocks,—1, nice comb though bit coarse, good color, nice wattle, hackle and saddle, trifle light at base of tail; 2, fair comb, fails little in wattle and lobes, good neck and saddle striping, tail trifle high, 3, neat comb, fair color, lobe and wattle, good back, saddle and tail; 4, fair comb, yellow lobe, fair hackle and saddle striping. Hens,—1, neat comb, fair back, neck and wing color, fails trifle in color of tail; 2, comb hardly out, fails color eye, good color on back and neck, rather pinched tail; 3, fair comb, back color shade foxy, wing little shafty. Cockerels,—1, a beauty, good eye, comb and shape, nice back and saddle, nice size; 2, nice comb, good legs and feet, bit dark at base of hackle; 3, nice all through; 4, heavy in comb. Pullets,—1, neat comb, good eye, nice color of neck, back and wings; 2, good comb and lobes, fails color of neck, bit pinched in tail; 3, hardly out in comb, good neck, and breast, fair legs; 4, trifle better in color, but comb picked, had to go down for this. S. C. Brown Leghorns made a big class with lots of good stuff unplaced. It was hard to do justice in the judging on account of the birds being cooped so high up.

Buff Leghorns: Best class in some years; Cocks—1, neat comb, fails bit in color of eye, good color otherwise; 2, rougher in head, bad lobe, good color; 3, a little small, good color, nice lobe and comb. Hens,—1, good head and eye, level color, clean tail; 2, very similar color, little pinched in tail; 3, little high in color, bit coarse in head. Cockerels,—1, good legs and feet, nice color, rough in head; 2, neat head, even surface color, fails shape of tail; 3, bit heavy in comb, level color, flat in breast. Pullets,—1, little heavy in comb, good color, tail, legs and feet; 2, pinched in tail, otherwise close up to 1; 3, high in tail, bit faded in color; 4, bit dense in color.

By H. P. Schwab, Irondequoit, N.Y.

Plymouth Rocks: Before commenting on the winners, as I found them, I wish to call special attention to a few noteworthy facts as they were presented to me. I have given it as my opinion that the general quality has been improved over that of a year ago. I wish to call special attention to the evident improvement made in the shape of all the Plymouth Rock classes. This feature was particularly noted by the writer with much satisfaction and when we fully considered that shape is type, and is the most important point we have to breed for, then you will better understand with me the real value of the improvements made. It is now very evident that the breeders have a firm grasp on correct shape, and that their future show and breeding birds, as well as their success, will be the better for this.

The color of the winners will receive proper attention in my comments. Regarding the Barred Rock color. I think it best to make a few special remarks, as they deserve it so well. The class as a whole greatly pleases me. Rapid strides have been made within the past year in obtaining an evenness of color that was grand to see. The shade of color of all the winners and of many unplaced birds was a conspicuous feature, as the males and females matched up so well.

Cocks,—1, also the winner of shape special. A grand all around specimen. Typical in form, splendid head points with a strong red eye. Legs clean and set well apart, his color was of beautiful steel blue shade that has to be seen to be fully understood. A most attractive and valuable bird. 2, not shown at his best, rather unfinished in hackle, saddle and tail, a good style of bird, strongly marked surface and finely marked under-color, deep red eye and good head points; 3, a very narrow and strong barred bird, unfinished in breast and tail, good form and no doubt is a splendid breeder; 4, also shown in unfinished condition, this show was just a little early for a few of these choice ones. He was a beauty in type, with extra eyes, legs and beak; 5, typical in every line, choice head points, color not quite as strong as others. Hens,—1, the beauty of the show, typical in every line, evenly, cleanly and narrowly barred with one of the clearest and best barred necks we have ever seen, shape of back ideal, full breast, etc. The general style of her color only excelled by the famous "Fluffy-Ruffles," the New York champion; 2, looks to us like the 1st pullet of last year, if so she has done well, choice in shape and choice of color, extra fine eyes, legs and feet, fails just a mite under on width of bars; 3, very similar to 1st in style of barring, just a half shade stronger in color, should make an extra breeder; 4, this third in shape, color and style of barring greatly resembles the New York winner, straight across barring and a beautiful surface finish, she was shown unfinished in wings; 5, believe this hen has been laying and was not at her best show condition, grand in shape and barring very clean cut and straight. Cockerels,—1, an extra bright and

snappy, clean barred bird, with close to perfect head, and shown in the best possible condition of feather, not very large but has quality in his entire make-up; 2, a most promising barred Rock, needs just two weeks more time to show his best form, as he is still unfinished in neck and tail, shape as near ideal as we have seen, with the best head, eye, and comb in class, narrow and clearly barred, and when finished, we can see in him one of the best cockerels we have handled; 3, very similar to 2nd, just a shade stronger in color, and comb not quite so good, will make another peerless show bird and breeder; 4, a very clean, snappy barred bird, good shape, with beautiful head and strong eye, etc., shown rather young, still a most desirable winner and breeder; 5, another young one, and when fully finished will run them a hot race, good in form and style of barring; 6, very similar to above, did not stand up quite so well. Pullets,—1, shown in pink of condition, a perfect gem, shape and shade of color is just what we like to see, it is difficult to find fault with her, as her entire make-up is most beautiful, a great winner; 2, a very snappy barred female with beautiful finish all over, shown a little young, will make a great show hen; 3, an extra fine pullet, and is well barred as we could wish to see, her shade of color strongly resembles the first hen, while her barring is strong and clean, being unfinished in wing placed her down this far; 4, one of the best in shape, a beautiful type, and just as desirable in shade of color and style of barring, think she was over-ripe as she failed underneath; 5, finely barred, just a half shade light and fails in breast; 6, a very choice pullet, extra in neck color, surface and under clean and well barred, not shown at her best, unfinished in tail and back; 7, worthy of a special mention, should make a grand hen. Entire class of the best and rarest quality.

White Plymouth Rocks: Cocks,—1, finished in detail, snow white, and of strong Plymouth Rock type, good comb and head, strong eyes, legs, etc., a most desirable bird and winner; 2, another grand one in type and color, almost equal to first, legs not quite as good and a mite unfinished in tail, pure white surface and under color; 3, another snow white one, of good form, with extra eye and all head points; 4, a great big fellow and a winner of last year, not fully moulted as yet, will be hard to beat when in full feather; 5, a real beauty and would have been placed better except for some ticking. Hens,—1, a perfect gem and as clear as the purest crystal, extra in shape and very strong in eye and leg color; 2, another grand hen close up, finished in detail and of choice form; 3, again we have a strong one, close up in all round, fine quality, very clean cut; 4, good and clean in all sections, choice form; 5, a fine specimen, not shown at her best. Cockerels,—1, between first, second and third it was just about a case of "close your eyes and take your choice." I have never seen three better cockerels at one show; all three had exceptional head points, strong eyes, snow white plumage and the most desirable type. Had not two of these been shown just a little carelessly, it is hard to say what the outcome would have been; I cannot recommend this quality too highly, and in this I am certain there was honor and glory enough for all of these three winners; 4, another beauty with best class, can well be satisfied to follow the above three; 5, a real nice one, a prince in shape and color, but not shown as well as the other winners. Pullets,—1, a pullet of the highest quality in both shape and color, strong yellow legs, extra eye and head points; 2, very choice in shape and of even quality throughout; 3, a grand one from every point of view, except fail just a mite in shape; 4, very similar to first pullet but not shown as well, in fact, but few can be shown as well as the first; 5, good in all ways, but needs but little better condition

to properly show up her rare qualities to best advantage. A class of very choice quality.

Buff Plymouth Rocks: The entry in numbers was rather limited, but it had all in quality that it may have lacked in quantity. Shape and evenness of color were prominent. Cocks,—1, very typical with head points and evenness of color excellent; 2, close up, fails a mite in surface color; 3, another choice specimen in color, fails in head points. Hens,—1, just the proper shade of buff, surface and under, very good head and eye; 2, grand in type, good and sound in color, but just a fraction strong; 3, fails in condition, still a rather good one. Cockerels,—1, in shape and color is as good as we have seen, extra head points and a most attractive bird; 2, a strong winner and in several ways near to the first prize birds; 3, very well put up but not as even in color as the other winners. Pullets,—1, she does not leave much to be desired, grand in shape, clean, even color, if she has a particle of foreign color I fail to find it; 2, very nice but not quite as clean in color as the first one; 3, fails just a little under, grand in finish and type. A real high quality class.

By Wm. McNeil, London.

Sultans: This was a very fair class, but nothing special.

Silkies: were about the best lot I have seen. Cocks,—1, was a grand bird, nice crest, grand in shape, good leg and toe feathering, but a little creamy; 2, another nice one about as good; 3, a little small in crest and hardly in as good show shape; balance of class fair. Hens,—1, was a nice one, fine crest, good comb and as white as snow, good leg and toe feathers; 2, a nice one with good crest, splendid in shape, not so good in color as first; 3, another fair hen, good crest, not as good in leg and toe feathers; balance of class all good; Cockerels,—1, a nice one, will make a grand cock, fair crest, good leg and toe feathers, nice shaped tail; 2, and 3, both close up; balance of class fair. Pullets,—1, a gem, fine crest, good shape, good leg and toe feathers, easy winner; balance of class all good.

Hamburgs: were not a large class, but quality was away up.

G. S. Hamburgs: Cocks,—1, a good one and an easy winner, nice head and comb and fine lobes, good in color, well spangled; 2, another good one, very rich in color, but too much white tipping; 3, a fair bird, but looks in color. Hens,—4; 1st, about as good a hen as I have seen for a long time, grand in color and with great spangling, fit to win anywhere; 2, another nearly as good; 3, close up to 2, I believe they are owned by one man. Cockerels,—4; 1st, a good one, but a little too dark on breast but had fine shaped spangles with grand color; 2nd, another good one; 3, a little too young to show, but will be a grand cock. Pullets,—1, 2, and 3, are good ones.

S. S. Hamburgs: Cocks,—8; 1, the best cock I have seen for some time, with grand spangling of the right shape, but a little creamy; 2, another extra fine one, better in color but not as good in spangling as first, but a good one; 3, close up to 2. Hens,—7; every one fit to win; 1, a good one with good comb and ear lobes, grand neck, splendid back, nice tail, good breast, as green as a bottle all over; 2, another good one, about as good in spangling as first, but hardly as good in color; 3, good one, close up to 2. Cockerels,—8; 1, I believe the best of the whole class, it did me good to look at him, he was a grand bird, just right for showing fine comb good wattles and ear lobes, grand back and breast and a good white tail with every feather spangled with pear shape; 2, another nice one, not so big or good as first; 3, another good one; all in the class were good but one. Pullets,—8; 1, an easy winner, if she

lives she will be a great hen, she had good shape, fine color, a right shaped spangle, about as green as a bottle; I think this was about the best class of S.S. Hamburgs I ever saw anywhere.

G. P. Hamburgs: 2 cocks, both in good shape: 2 hens in same condition. Cockerels,—3; 1, a nice one, grand in color, good tail; 2, another nice one; 3, close up. Pullets,—5; 1, grand in color, finely pencilled; 2, another good one; 3, close up.

S. P. Hamburgs: Cocks,—3; 1, grand color, nice head and tail; 2, another fair bird, fair comb and ear lobes, not as good in tail; 3, close up to 2. Hens,—3; 1, and 2, both good ones, very fine pencilling; 3, good one but a little darker in pencilling. Cockerels,—1, nice head and comb, good tail, splendid ear lobes; 2, another good one, but a little small; 3, fine big bird, but carried tail too high. Pullets,—1, good comb and ear lobes, nice back, good tail, well pencilled breast; 2, another nice one, not as good on breast; 3, close up to 2.

Black Hamburgs: Cocks,—7; 1, a nice bird, fine head, comb and ear lobes, grand color all over, but tail a little broken up; 2, was a nice one, good comb, ear lobes and wattles, grand in color, but a little bronzed in tail; 3, the best shaped bird of them all, good head, comb and ear lobes, splendid color, but tail bronzed a little and legs a little rough, otherwise a good one, balance of class fair. Hens,— 7; 1, a nice one, good color, nice head and ear lobes, fair comb, nice shaped tail; 2, another good one, but hardly as good in color as 1, fair comb and ear lobes; 3, close up to 2. Cockerels,—7; 1, a good one, splendid head, comb and ear lobes, splendid color, good carriage; 2, another fair bird; 3, close up to 2. Pullets,—8; 1, a good head, nice shaped comb, but a little large, fine in color, good shape, grand tail. I think she won the special for the best hen or pullet; 2, another nice pullet, nice comb and ear lobes not so good in color as first; 3, close up to 2.

Ornamental Bantams.

Golden Sebrights: Cocks,—6; 1, an easy winner, he is about one of the best birds I ever saw, fair comb, good in color all over, very fine lacing; 2, another nice one, good comb, nice back, little heavy in lacing; 3, another good one, good shape, nice color, but too heavy laced. Hens,—7; 1, a good one, and mate for first cock, right shape, nice fine lacing all over, an easy winner; 2, another good one, nice head and comb, fair color, but a little heavy in lacing; 3, close up, balance of class good. Cockerels,—7; 1, good bird, fair comb and wattles, nice neck, good color back and breast, a little heavy in lacing, a little too long in legs and tail, otherwise a good one; 2, another fair bird, a little off on comb, not so long in leg as 1, very even lacing but a little too heavy; 3, close up. Balance of class all fair birds. Pullets,—8; 1, was a nice little one, good in color and splendid in shape, and finely laced; 2, another good one, splendid color, good shape, but a little heavy in lacing; 3, another nice one, but a little high in color, a little heavy laced, otherwise good. Balance of class all nice. I might say, not a poor bird in lot.

Silver Sebrights: Were a grand lot, 11 cocks; 1, was a model Sebright, good comb and right color, nice, short back and square tail, fairly laced and good color; 2, another good one, not as good in comb, splendid shape bird but a little heavy in lacing, otherwise good; 3, a nice little fellow, fair comb, good back, nice neck, fair tail, a little too heavy in lacing, balance of class all fair birds. Hens,—11, 1, was a little gem, short legged, short backed, nice tail, and finely laced all over, and good color: 2, another

good one, a little higher on leg than 1, grand color, with a fine tail, but lacing a little too heavy; 3, another good one, good head, nice neck, splendid tail, a little heavy laced, balance of class all good, not a poor one in the lot. Cockerels,—8; 1, was an extra good one, nice head, good comb, well laced neck, nice and short in back, with a good tail, just the right type for Sebright; 2, a little fellow and grand in color, but not so rich in color as first, he will make a grand old bird: 3, another good one, nice comb, good neck, nice back, good tail, well laced all over, but a little heavy; balance of class all fair. Pullets,—1, a little beauty, nice and short on leg, grand in color with very narrow lacing, good tail; 2, another nice one, but not as good as first; 3, close up, balance of class all good.

Black Rose Combs: Cocks,—12; 1, a nice one, good head and comb, and ear lobes just the right type for a Black Rose Comb, with an extra good tail, grand in color, not a white speck on him; 2, another good one, a little off on comb, not so good in lobes, grand in color, with a fine tail, just about the right type; 3, another nice one, fair comb, good lobes, good color, not so good in tail; 4, close up. Hens,—12; 1, grand in shape, nice head and comb, good lobes, good in shape, back and tail; 2, another good one, good comb and lobes, splendid in color, but a little too long in back; 3, another nice one, not as good in comb, lobe or color; 4, a nice one, close up to 3, balance fair. Cockerels,—16; 1, about the best Black Rose Comb Cockerel I have seen for a long time, small comb, good lobes, short on back, with a grand tail, just the right shape; 2, another nice bird, grand shaped comb, a little too large, splendid ear lobes, an extra fine tail, but he does not carry it just right, wings were hardly good enough in color; 3, another nice bird, fair comb, good lobes, good shape back and a fair tail, not as good in color as 2; 4, another nice one, fair comb and ear lobes, a little long on back, fair tail, balance of class fair. Pullets,—16: 1, was a little gem in shape, with good comb and ear lobes, fair color, good tail; 2, another nice one, but hardly as good in shape, good comb and ear lobes, a little better in color than 1; 3, another nice one, but hardly as good in comb and ear lobes, good in shape, not so good in color; 4, close up, balance of class fair. I am sorry to say that I found a great deal of white tips in the Black Rose Combs, and at a passing glance one would have thought the judge made a mistake, but if the birds had been taken and handled you would see the decision was right.

White Rose Combs: Cocks,—6; 1, nice little fellow, full of style and good color, with nice comb and ear lobes; 2, another good one, just the right type with grand head, comb and ear lobes, good shaped back, but lacked a little in tail; 3, close up to 2. Hens,—7; 1, was a neat little one, all style, nice head, comb and ear lobes, short on back, with a nice spread tail, an easy winner; 2, another nice one, fair comb and ear lobes, but not so stylish as first, carried her tail a little close together, good in color; 3, another fair one, comb not so good, a little larger, not so stylish; balance of class good. Cockerels,—9; 1, was as good as the Black cockerel, nice head and comb, good ear lobes, splendid type, with a grand tail, an easy winner; 2, another fair bird, not so good in ear lobes, hardly as good in tail, but a fair bird, 3, close up to 2, balance good. Pullets,—10; 1, was just a mate for first hen, nice little head and comb, with good lobes, short on leg, with a nice low wing, tail well spread, a little beauty an easy winner; 2, a good one, with fair comb and good ear lobes, nice short back, good color, carries her tail a little close; 3, close up to 2; balance fair.

White Cochin Bantams: Cocks, 8; 1, an easy winner, nice head and comb, short neck and full hackle, good short back with nice cushion, and tail about the right length, leg and toe feathers good, but a little creamy in color; 2,

another good one, but not as good in shape as first, with a fair comb, not so short in neck nor as good in back as first, but a little better in color, hardly as good in leg and toe feathers; 3, close up to 2. Hens,—10; 1, a good one, splendid in shape, with good color, nice short neck, good back, good in leg and toe feathering; 2, another nice hen, not so short in neck as first, or as good in back; 3, another nice one close up to second. Cockerels,—5; 1, an easy winner, the best white Cochin in the class, good head and comb, nice short neck and back with fine cushion and tail carried at the right height, good leg and toe feathering; 2, another good one, but hardly as good in neck or back as first, good leg and toe feathering; 3, close up to 2; balance good.

Pullets,—4; 1, a nice one, nice little head and comb, short neck, good back, nice tail, good in color with nice leg and toe feathers, nice mate for first cockerel; 2, another good one, but hardly as good in shape as first; 3, close up to 2; balance good.

Buff Cochin Bantams: Cocks,—6; 1, wins on color, he was about the best colored bird I have seen; 2, grand in shape, but under color was very poor, also wings; 3, close up to 2. Hens,—8; 1, was a beauty, grand in shape, and right close to ground, fair color; 2, another good one, but not as good in color or shape as first; 3, close up to 2. Cockerels,—11; 1, was fair shape, but off on color; 2, another about the same as first; 3, not much different; there was not a good cockerel in the lot and the breeders of Buff will have to do better, as they are getting too much white. Pullets,—1, was a little beauty, nice short neck, and good back and nice tail, short on leg and lots of feathering, grand in color; 2, another nice one, good shape, a little too light in color; 3, another close up to 2; balance of class fair.

Partridge Cochin Bantams: Cocks,—6; a grand lot, but a little too large. 1, a nice one, good head, grand hackle and saddle, nice breast, good leg and toe feathers; 2, another nice one, about as good as first, only lacking in leg and toe feathering; 3, another good one, but not so good in leg and toe feathering or in breast. Hens,—6; 1, was a grand one, splendid color, about as good as any large Partridge hen I have seen, good shape, well pencilled all over, with good leg and toe feathers; 2, a small one, well pencilled all over, but not as good in color; 3, lacked in color; balance fair. Cockerels,—7; 1, a nice bird, good color, nice shape, good leg and toe feathers; 2, another fair one, will be a good one, but is a little too young; 3, hardly as good in color. Pullets,—6; 1, was a nice one, good color, well pencilled, good leg and toe feathers; 2, not as good in color or leg and toe feathering as first; 3, close up; balance fair.

Booted Bantams: Cocks,—3; 1, a good one, nice comb, good color, nice high tail, good back, nice length of tail and toe feathers; 2, another fair one, nice comb, short on back, fair tail, good color, not as long on tail and toe feathers as first; 3, close up. Hens,—1, a nice one, good length of neck, nice back, nice long tail, good length of leg and toe feathers; 2, another good one, hardly as long in neck or tail as first, good color, a little off on leg and toe feathers; 3, close up to 2. Cockerels,—5; 1, the best bird in the class, nice head and comb, good back, with nice long tail, good leg with lots of feathering and grand in color; 2, about as good, only lacked in length of tail; 3, another fair bird. Pullets,—1, about as good as the first cockerel, nice head, good comb, back and long tail, good leg, toe feathering; 2, and 3, both nice ones.

Black-tailed Japanese Bantams: Cocks,—4; a grand class; 1, nice head, grand comb, nice short back and the right shaped tail, with sickles edged with white up to the end, wings carried low, and short legs; 2, another about as good, grand comb, splendid shape all over, sickles not hardly as

long or as well edged with white; 3, another good one, splendid comb, nice and short in leg, good tail, but a little creamy across the shoulders. Hens, —5; 1, a nice one, just the right shape for a Japanese, close to the ground, very short on back, but tail hardly good enough; 2, another good one, good shape, splendid color, close down, carried her tail feathers too close together; 3, a nice hen, good shape, but had a bad comb. Cockerels,—4; 1, a good one, splendid in color, with grand head and comb, nice short back, wings splendid in color, with grand tail, will make a fine old cock, was an easy winner; 2, fair, not so good in color as first; 3, close up. Pullets,—4; 1, an easy winner, about as good as first cockerel; balance of class all good.

White Japanese Bantams: Cocks,—4; 1, a nice one, good comb, nice neck, short back, good tail, close to the ground; 2, another good one but not as small or as short on leg as first; 3, was a beauty, but creamy across shoulder. Hens,—4; 1, was an extra good one, small close down, with a grand tail; 2, another good one, hardly as good in shape as first; 3, about as good as 2. Cockerels,—3; 1, a little fellow, with fair comb, good color and nice yellow legs; 2 and 3 both good, but off on leg color. Pullets,—3; 1, a little one, will make a grand hen; 2 and 3 both nice, but not as good type as first.

Black Japanese Bantams: Cocks,—1, a beauty, splendid in shape, with nice head and comb; 2, off on comb, and tail was in poor condition, grand in color; 3, was too high on legs. Hens,—5; 1, good shape, fair color; 2, a little better in color but not as good in shape; 3, was a little long in legs. Cockerels,—1, was a good mate to first cock, good in color and a Jap. all over; 2, fair in shape, but a little too high up; 3, close up. Pullets,—4; 1, a good one, fair color, good shape and tail; 2, another good one, not as good in shape, a little longer on legs; 3, close up.

A.O.V. Japanese Bantams: Cocks,—5; 1, a grey, I believe the best bird in the class, grand in color, splendid shape; 2, a golden duckwing, a good one, grand in shape and color; 3, a black red, grand in shape and color; there was a nice frizzled there, but it had a poor tail. Hens,—6; 1, a frizzle, a nice little bird, a good Jap; 2, a grey, a little large; 3, another fair bird. Cockerels,—5; 1, a grey, good typical Jap, nice color; 2, another nice one; 3, close up. Pullets,—1, a nice little grey, good Jap. style, good color, 2 and 3 both nice.

Bearded Polish Bantams: This was the best class I ever saw of this variety. Cocks,—5; 1, a grand one, fine crest and beard, good neck, nice back, but tail a little too short; 2, another good one, good crest and beard, back hardly as good as first, with a good pair of legs; 3, another good one, but hardly as good in crest or beard, a nice back, a little short on tail, good legs; balance good. Hens,—5; 1, a gem, very fine crest, and beard, nice pair shoulders, tapered to tail, splendid legs; 2, about as good; 3, not much difference. There was one grand hen there, but her crest was wet while I was judging. I saw her next day and I would like to have placed her. Every one of the five cockerels were fit to win anywhere. 1, was a good one, fair crest and beard and stood up nicely on good legs, nice shaped back and tail; 2, hardly as good on crest, but the making of a good one; 3, close up to 2. Pullets,—5; all good. 1, grand crest and beard, good shaped back and tail, nice blue legs; 2, not as good in crest but otherwise good; 3, close up to 2.

Unbearded Polish Bantams: A nice class, but not as good as the bearded. Cocks,—4; 1, a real polish, nice crest, good wattles and comb, good tail, blue legs; 2, another nice one, but hardly as showy as 1; 3, not far behind 2. Hens,—5; 1, a good one with a nice crest, good wattles and comb,

good blue legs; 2, another good one, fair crest, good wattles, not hardly as good in shape as first; 3, close up. Cockerels,—4; 1, a good one, fair crest, nice wattles and comb, good shape on back; 2, another good one, but not as good in crest, fair tail; 3, close to 2. Pullets,—5; 1, good crest, nice wattles and comb, good neck, splendid shape, good tail and legs; 2, hardly as good in crest, nor tail shape; 3, another good one.

Brahma Bantams: Cocks,—8; 1, a light cock, good head and comb, grand hackle, nice back, well furnished tail coverts, grand color, fine leg and toe feathers; 2, hardly as good; 3, close up to 2. Hens,—13; 1, a nice one, nice head and comb, with good hackle, fair wings, with nice tail and good coverts, she seemed to be a little in the moult, as quite a few feathers were out of her back, otherwise she was a good one; 2, a nice little one with fair hackle and tail, good back, but very poor on wings; 3 and 4, close up to 2. Cockerels,—1, was the best Light Brahma Bantam I ever saw anywhere, nice head and comb, grand hackle, good back, splendid tail well furnished, with grand pair of wings, leg and toe feathers extra good; 2, another nice bird, splendid shape, good head and comb, a little light in hackle, good tail; 3, close up to 2. Pullets,—12; 1, was a good mate to first cockerel, nice head and comb, grand hackle, nice color, with an extra fine tail, well furnished with tail coverts, black right down to skin, extra good wings, fine leg and toe feathers; 2, another nice one with fair head and comb, nice back, good tail, but poor on wings; 3 and 4, close up.

A.O.V. Bantams: A nice pair of Buff Polish in old birds and a good Frizzled pullet. In cockerels there was a Black African single Comb shown, but I did not award it any prize. The owner showed it as a Minorca Bantam.

By L. G. Jarvis, Grimsby.

Polish Classes: For quality we have never seen better at any show held on the continent, particularly the White and Black. Winners grand in color with well formed crests, shown in natural condition; the first cock, the first hen, first cockerel, first pullet winning the cup for the four best birds in the show. It is not necessary for me to explain in this class why one bird was awarded the prize over another, but simply say the difference was found to be principally in color.

Black Rose Comb Minorcas: A very fine class, the largest entry we have ever seen at this show, and the quality above the average. Cocks,—1, good shape, fair comb, good color, free from purple, with deep body and great bone; 2, a good one, hardly as rich in color of plumage; others good. Hens,—1, typical shape, neat comb, good color; 2, not as good in shape, good color. Cockerels,—1, a big one, grand color, hard to beat; 2, a good one, beaten in depth of color; 3, not as good in shape of body; Pullets,—1, a neat one, wins easily in color; 2, nice shape in every section, but failed in color of wings; 3, not as good in shape.

Partridge Wyandottes: A nice entry; Cocks,—1, all Dotte, good color, hardly through moult; 2, a nice one, good color, failed to first in shape; 3, not in good shape, will show better later. Hens,—1, nice color and fair shape; 2, not as good in color; 3, lost in color. Cockerels,—1, grand condition, but was crowded by 2 won principally on condition over 2; 3, a very neat little bird, will show better; Pullets,—1, rich in color, good shape in fine condition; 2, good color, not so good in shape as first; 3, not as good in color as other two.

Dorkings: Colored not a large entry, but some good ones. First cock wins both in shape and color, first hen, a large one and in better condition

than any in class. First pullet, a good one, but we doubted her age, but being informed by the owner that she was certainly a pullet, she won out both in color and shape; 2, a nice pullet, beats third in size and condition. First cockerel, all Dorking, wins easily; 2, hardly developed, will show better. Silver; a fine class. First cock, nice shape and clean in color; great bone; 2, also a good one, lost to first only in color; 3, a little heavy in color of hackle and saddle. First hen, a big one, wins in color in every section; 2, grand shape, little "bricky" on wing. First cockerel, an extra good one, but crowded by second except in color of back and saddle; 3, beaten in color; First pullet a good one, with very deep body and fair color; 2, very close, lost in shape; 3, lost in color of wings. Whites, a small entry, winners good ones.

Houdans: Not so large an entry, but some extra fine birds. First cock wins in color only; 2 cock, a trifle light in color in all sections, yet both colors were very distinct, and was crowding for first place. First hen, a large one and fair color, with nice crest and beard; 2, hardly as good in color. First cockerel, an extra good one, nice shape, very even in mottling; 2, hardly as good in shape or color. First pullet wins in color; 2, and 3, good ones.

A. O. V.; not a large class, made up principally of Anconas, one Jubilee Orpington, a few Faverolles and others.

Water Fowl: As might be expected, we had certainly a grand lot of both geese and ducks. Toulouse, an extra nice lot; 1st gander, a large one and good in color; 2nd, nice color, failed to first in shape only; 3rd, a good one, not as large as other two; 1st goose, a big one, with well formed body and in fine condition; 2nd, hardly as large as first; 3rd, not as clear in color. 1st young gander, very large and well developed, nice color; 2nd, also a large one, failed a little in shape of body; 3rd, not as large. First young Goose, a very large one and hard to beat both in color and size; 2nd, a very nice one, hardly as large; 3rd, still smaller. Embden, a large class; 1st gander beats others in size and shape of body; 2nd, very white; 3rd, lost in size. 1st goose wins in shape of body over 2nd; 3rd, not so large. Young goose, very white, fair in shape, hardly developed; 2nd, not so large, younger. Young gander, a big one, fine condition, wins easily; 2nd, younger; 3rd, small. Chinese, a few good ones, prizes awarded principally on shape. African, a nice class, shape and size decided prizes. A.O.V., class contained some Yellow and Wild Geese.

Ducks: Pekins, a large class and winners good ones; 1st drake a gem, large, well formed body with great length and depth; 2nd, another good one, hardly as large, good head; 3rd, fails to other two in size. 1st duck like first drake, hard to beat. 2nd. a very neat one, failed a little in size; 3rd, a trifle smaller, good shape. 1st young drake like first old one, I think owned by same exhibitor, hard to fault in any section; 2nd, a close one, trifle smaller; 3rd, a very good one, not so large; 1st, young duck, a typical Pekin, large, deep body and well rounded with great kell; 2nd, hardly as large; 3rd, lost in size, looks younger. Aylesbury, 1st drake, better condition than second; 3rd, not in show condition, a good one. 1st duck a nice one, could be in better condition. 1st young drake wins easily in size and shape; 2nd, a fair one, will improve. 1st young drake, nice head and bill, and beats second in these sections. Cayuga, a small entry, prizes went to color chiefly. A.O.V., a small class. Ornamental, a nice class, some extra good ones. Rouen, 1st drake, fair in color, would like to see more depth of claret on breast, and free from frosting or edging; 2nd, not as nice in body

shape, equal in color. 1st duck a nice one, wins easily in both color and shape; 2nd and 3rd very good. 1st young drake, good size, crowded by second, both will show better in a few weeks. 1st and 2nd young ducks, very close sisters, a fine pair, win easily over rest of class.

By N. Cosh, Auburn, N. Y.

White Minorcas: a small class with no apparent improvement over former years. 1st cock, a large bird, off in color of wing, otherwise fair; 2nd, not so large, better in head points and rather better in color, but too short in back; 1st hen, good comb and head, nice in shape of breast and body, slightly pinched in tail; 2nd, and 3rd, lose on head points and shape. 1st cockerel, good head, nice Minorca type; 2nd, better in color but loses on shape; 3rd, good color, but lacks style; 1st pullet, good head and size and proper type; 2nd and 3rd lacks size and color.

White Orpingtons: 1st cock, and extra good one, a very blocky fellow with excellent color, has had his comb frozen off, carries his tail just a trifle high; 2nd, has good head and fair shape, very creamy in color; 3rd, stands too high up but better color than the 2nd, short in feathers as yet. 1st hen a wonderful specimen, the finest we have ever seen, true Orpington type, good comb and head, and plumage absolutely white; 2nd, another grand one, equal to the 1st in color but not in head points, nor in shape in breast or depth of body; 3rd, also snow white but fails in head and shape. 1st cockerel, good head points, plenty of size, and nice Orpington type, but not so white as we like to see them; 2nd, very similar to first, in every way, only that he stands a trifle high; 3rd, nice in head and body shape, but carries tail too high. Little to choose between the first and second pullets; 1st a trifle larger and sounder in color of lobe, 2nd, slightly better in leg color; 3rd, loses on shape.

Dominiques: 1st cock, quite a good one, but still great room for improvement in color; second, fairly good type, but lacks greatly in color and barring, better than third at that. First hen outclasses all her competitors, rather small neat head, good color and barring in all sections, especially fine in tail barring; second and third, good type, more size, but away short in color. First cockerel, nice type and better than the average in color; second, not so well developed; third also small and off in color. First pullet, fair color,; second, very brown.

Black Javas: First cock, shown in good feather, has grand color, and is quite a good all-round specimen; second, good color but still ragged; third, off in shape of back and color of wing. First hen, nice head and good length of back and body, but not yet ready; second and third, good color, but too short in body for a good Java. First cockerel, not in best condition, but has better color and type than second and third, which are too short in the body and carry their tails too high; the remainder of class go to the other extreme, long enough in shanks for Langshans. First pullet, good all the way; 2nd, not quite as good in shape and size; 3rd, excellent color, but off in style.

Mottled Javas: First cock, an excellent all-around specimen grand in both shape and color; 2nd, not in so good condition, but quite a good bird. First hen, like the first cock, a rare specimen; 2nd, also good. First cockerel, fair. First pullet, a good one.

Black Spanish: Little to choose between 1st and 2nd, cocks. First has a greater length of face, but not so smooth as second; both grand in

color. First hen better in face and comb than second and third. Cockerels and pullets quite good specimens but lack development.

Andalusians: A large class and some very fine specimens, notable first cock, a bird of excellent shape and style, quite a nice small comb, good sound face, nice in lobes and wonderful color in all sections, one of the best specimens we have ever seen. Second quite an old bird, not in the best of show condition, and showing some white in face, but superior to those under him in shape and color; 3rd, a fairly good bird with two or three others running him very close for the place. First hen quite a good bird, showing some white in face, however; 2nd, better in head points and in shape, but not equal to first in plumage. 3rd, rather short in leg, and not so clean in color 1st Cockerel, fairly good comb, splendid lobe, good style, and nice rich plumage in all sections. The remainder of the class not up to former years. Pullet class better and little to choose between the first three, but the first and second better developed in head points.

Black Orpingtons: Perhaps the finest class ever shown in Canada, and many grand specimens went without prizes. First cock, a little short in feather yet, but a magnificent bird, with a splendid head true Orpington shape, and color as good as it is possible to have; 2nd, another grand one, not quite equal to first in head points, but good at that, with the same magnificent color and grand shape, shown in rather better feather, but just a trifle short and small for an up-to-date Orpington, a hard one to beat, however, on account of his grand finish; 3rd, another fine, large specimen, with grand shape and color, comb just a trifle large, not quite ready; 4th, grand color throughout, great size, nice five point comb, fine head and wattles, has a couple of broken flights and lacks in tail and saddle. First hen, grand style and shape, fine color, about as good as we have ever seen; 2nd, a fine large hen with grand color, fails slightly in breast and saddle shape; 3rd, much the same, but not quite equal in color; 4th, grand color, but off in comb. First cockerel, the finest we ever handled, great size, grand comb and head, an immense, deep body, simply faultless in color; 2nd, another good one, just a bit young yet, beautiful head and comb, marvellous color, good Orpington shape, just a trifle higher on legs than we like, but when fully developed, this will be scarcely perceptible; 3rd, not quite equal in color or condition to first or second, but a magnificent cockerel at that, his only fault being that he is a bit pinched in tail shape and just a shade narrow; 4th, not quite equal in shape and true Orpington type; 5th, good in shape, but fails in color, not entirely free from purple, and some grey in wings. First pullet, nice head and comb, true Orpington type, well shown; 2nd, a grand one, and in two weeks time would beat the first, grand color and type, better than first in shape of breast and body, tail not quite finished yet; 3rd, nice comb and head, grand color, but off in breast and tail shape. Quite a number of large, grand colored pullets had to be passed by, on account of comb either twisted or fallen to one side.

Lafleche: First cock, good head, grand shape and color, a good one; 2nd, loses on color and lobe; 3rd, fails in head points, size and shape. First cockerel, rather raw yet, will make a good one; 2nd, nice comb and lobes, but fails in shape of back and length of shanks. First pullet, a really nice one; 2nd, immature.

Creve-Cœurs: Just one cock bird, a good one. First hen a beauty in every way; 2nd, another good one, not quite ready; 3rd, a big one, very dull in color. First pullet, a good one.

By S. Butterfield, Windsor, Ont.

Light Brahmas: Cocks. 1st, very large and good. Coop none too large for him to straighten out his legs, he could not flap his wings, and along in same coop is first hen, and the two have to crowd one another if either of them want to even straighten themselves out; 2nd, a good large bird, but not so shapely as the first; 3rd, a very fine, stylish Brahma, but too small in size. Second hen, a little smaller than first, but rare quality; 3rd, another good one, as was the fourth, grand quality, but like 3rd, cock, on the small size. Cockerels,—1st, a rare, large, showy bird, easily 1st; 2nd, a nice younger bird, his greatest fault is ticking on the saddle; 1st pullet, a gem, with just about as good a neck, hackle and tail coverts as ever seen; 2nd, grand in tail coverts, but not as good in neck hackle as first; 3rd, another good one, a little shorter in legs than standard requires. Balance of class too young, want more development to say justly of them.

Dark Brahmas: 1st, 2nd and 3rd, cocks all very good birds, but the first was much the neatest in finish; 2nd, is coarser in some sections; 3rd, coarser still. Hens,—1st, 2nd and 3rd, all very grandly pencilled and good in size and shape, but the prize fell almost entirely on the best ground color. Cockerels,—1st, has a good ground color, very good bird; 2nd, a nice one, but much younger and will probably win over first if shown as a cock next season. In pullets, the winners won very much on the same line as the hens.

Buff Cochins: 1st cock, very sound in color and very good in under color, a little high on color of wing, and carried rather too low in tail; some parts of second were just about perfection, carried an immense body and cushion, not nearly so sound in color as first; 3rd, a very good bird, but smaller and did not carry the length of feather. Balance of class fair. First hen, a Cochin model, especially so in legs and front neck feathering; 2nd, very good in cushion and very fine in leg and toe feathering; 3rd, not very even in color, and absence of tail spoilt her show qualities. Balance of this class very good birds. Cockerels.—this class very close; 1st, a grand color, and very sound and even, rather a nice bird; second, not quite so sound in color, and when about one month older I think, would beat the first: 3rd, a nice younger cockerel than the two which won over, and he would be considered a winner if the other two were absent. Balance of the class had to give way to the development of the business. Pullets,—1st, a grand even colored bird and very sound in color; 2nd, very sound with a nice, well developed cushion; 3rd, a grand pullet, but too young for the preceding winners. Balance of class good.

Partridge Cochins: 1st cock, a good one, especially in color; 2nd, not so grand in neck and saddle; 3rd, not up to the first or second in Cochin shape. Hens,—1st, a good hen and won easily on color, although not in good condition. Cockerels,—not far enough advanced, but the three winners all seem very promising. Pullets,—1st and 2nd, better than we have seen in the last two or three years at the Ontario; 3rd, not so rich in color and pencilling. Balance of class fair.

Black Cochins: A very fine class, a litt' better than usual.

White Cochins: Cocks, very large, but not so stylish as the Buffs. 1st and 2nd hens very good. 1st cockerel a grand white Cochin, but small in size.

Langshans: 1st cocks condition made him win; 2nd in poor feather or would have won; 3rd, legs not very good. Hens,—1st and 2nd, nice sheen and good in size: 3rd, a nice shaped hen but lacks sheen. Cockerels,—1st, easy winner; 2nd, a pretty fair bird: 3rd, a very promising fellow. A real

good one in this class, had to be left out for carrying his tail too high. Pullets,—1st, great in color; 2nd, a large pullet but not so neat as first on day I judged. There were two or three grand shaped pullets but they lacked in sheen or awards might have been changed. All in all a very good class.

S. C. Minorcas: First cock, a very large bird with a great comb and very large white ear lobes, about the only fault he had was a corn on his foot; 2nd, another grand headed bird but lacked considerably in head points to those placed above him; balance of class good stock birds. Hens,—1st, alone for real type of a female, and I never saw a Black Minorca hen with such a green sheen, and absolutely free from purple in every section, one of the very best I ever saw; 2nd, not so good in color as first, but a very fine hen; 3rd, should have been second had her wings been as sound in color as the two preceding ones; 4th, a grand shaped hen and good Minorca type. Cockerels,—1st and 2nd very large, very much alike, grand in shape and both carried grand tails and body shape. I preferred the one I placed first, for he was much richer in color; 3rd, a good bird a little smaller; 4th, a nice headed bird, and very even in shape, and very sound in wings; 5th, nice, both much younger.

Games, Black Red: A very heavy class; 1st cock, rather a nice, compact bird, on the small side; 2nd, a very good, all round cock, but not shown in good condition, his worse fault was too long body. A cock I would liked to have placed carried very loose high wings and a very high tail. 1st hen, a very high class bird; 2nd, 3rd and 4th hens, very good. 1st, cockerel, a very high class bird; Pullets, was a fairly good class.

Games, Brown Red: No cocks. One hen, very good. One cockerel, I wrote on his card— "A Mongrel." Two pullets, fair to middling.

Games, Duckwing: Old birds, very good, just enough to take the prizes. Chicks, only fairly good.

Games, Pyles: Two good cocks, 1st, shorter in body and carried himself nicely; 1st hen, a grand, good hen; 2nd, and 3rd, fair. Cockerels and pullets, fairly good.

Games, Sumatra: Not nearly so good as usual, especially so in females. 1st cock, had a very desirable saddle and saddle hangers. Balance of class sadly deficient in that which constitutes high class Sumatras.

Games, Indian: Very good, just enough good birds to get the awards. Class as a whole not nearly so good as last few years. One very nice cock and first, second cockereds in Old English Games were very good.

Games, A. O. V.: Some very good birds amongst them. Quality of games as a whole not up to some years.

Game Bantams, Black Red: First cock in the pink of condition, a very small bird, but very reachy; 2nd, a good bird but not far enough through the moult, not by any means at his best; 3rd, close up. One really grand cock bird in this class was top notcher, but carried much to high a tail for company. Cockerels; 1st and 2nd, I was told after judging, just out from the old country, 1st, always showing himself in just about perfect shape, did not need any stick to make him show himself, better color on neck and saddle, very free from ticking in saddle; 2nd, a grand bright bird, but did not carry himself folded up like 1st; 3rd, very reachy and large in size, a good actor, but had an extraordinarily long tail and showed considerable ticking on his saddle. Hens; 1st an easy winner for short, hard feathering none her equal, though the 2nd was not very far behind; 3rd, another good one, and one or two more good ones in the class. Pullets; 1st, a very easy winner, she had just about one fault-a little longer in body than is wanted; 2nd,

a really good one, her breeder must have looked at her with a great deal of pleasure; 3rd, a nice one, close up to second. I could easily have placed six mentions in this class without any flattery, for each was of good high quality

Game Bantams, Brown Red: A good heavy class; 1st cock, grand and distinct in breast lacing and very choice in top color, and his greatest fault was his legs being placed a little too far back on his body; 2nd, a very good bird, his worst fault was that he seemed very short necked and not so distinctly laced on breast; 3rd, has been a good cock but he was not in good show condition. Balance of class only fair. Hens,—1st, a good one in fine show condition; 2nd, a grand good hen, and so was the third. Cockerels,—a good class and some of those too young to place this year will surely be among the choicest of the cock birds another season. This class was about the best Brown Red class for years.

Game Bantams, Duckwing: 1st cock, the purest in color, and a bird that it will take a good one to beat him; 2nd, a nice cock but clear in wing, shoulders showing red mixed with the orange; 3rd, much the same fault, only showed more red. Hens,—1st, rather on the large size, but a grand good hen and would help considerably any breeders' yards for she has neck, back, saddle and tail formation that good breeders so much desire; 2nd and 3rd, smaller, but they lack tail and saddle formation. Cockerels and pullets in this class were very good.

Game Bantams, Pyles: 1st cock, I understood was third cockerel last year; 2nd, another grand cock, but not showing himself full of vim; 3rd, another grand bird, not a great deal behind the first and second. Cockerels,—1st a nice acting gentleman but shorter in neck and larger in tail than first and second cockerels last year; 2nd, ran the 1st pretty close, then after those 1st and 2nd there were four pretty hard to tell which to give the preference to. Hens,—1st, an easy winner, her only fault a little higher in color than standard requirements; 2nd, a grand top-notcher, grand all over; 3rd and 4th, very high class, and as a class stronger than the males; Pullets,—1st, only had about one fault, and that was too light in breast color but the formation of body, back, tail and wings makes her a very desirable bird I like 2nd pullet even better than 1st, but she had sadly too much color, hence placed her 2nd; 3rd and 4th, close up. Pyle Game Bantam females made an extraordinary good class.

Game Bantams, Birchen: The winners were remarkably good birds, not even a middling good bird, but all high-class. Whites not as heavy class as usual, 1st cock, excepting looking large, a very high-class bird; 1st hen a good one. In the whole class there was not a poor specimen.

Game Bantams, Indian: Except for being larger than we require Bantams to be these were quite equal, if not superior to the Cornish Indian Games; remarkably fine specimens were first cockerel and first pullet.

Game Bantams, Old English: 1st cock, 1st hen were spangles and very nice and original they looked. And sure they are the young boys' bantams and may do for the babies for pets.

Bantams, Black Cochins: 1st, 2nd and 3rd cocks all very high-class and first wins over second for color and 2nd wins over 3rd in shape; 4th, another high-class bird. Hens,—1st, almost as good a sheen as first Minorca hen, very shapely and small, an easy first; 2nd, nice Cochin, lacks color of first; 3rd, a grand hen; 4th, a grand good hen. Cockerels,—1st, very green in color, very neat in head and looks like making a champion cock; 2nd, not in as good show shape as at Thanksgiving Day; 3rd, rather a hard one to beat in this class. Pullets,—1st, easy in both shape and color; 2nd, a nice one; 3rd and 4th, really good.

By James Anderson, Guelph.

Turkeys: In the aged Bronze four good specimens were shown. The first prize one was an exceptionally good Bronze turkey cock, beautiful plumage, fine heavy bone, well colored legs, good length, fine full breast, fine barring on wings, primaries also well marked, in every way a first class bird The second was equal in size and weight but his plumage was not of such a brilliant bronze as the 1st one and the legs not so good in color, but he was also a grand specimen of a Bronze turkey. The others were fair to medium. In the next class there were 7 entries all good birds. 1st prize cock was very large and had good heavy bone and good clean wine colored legs and beautiful barring on his wings, fine full back and breast, and was very little behind in the weight to the two years and over birds. The second and third prize birds were also good in every way, the others were fair to medium. The next class, young cockerels, there were 13 entries and all good birds, some of them extra good, others too leggy and not so well marked. The first prize cockerel was a very fine bird and will be heard of at other shows if properly managed being well proportioned, good wing barring, fine heavy bone, and altogether the build for a first class bird, the 2nd and 3rd prize birds were also good, in fact there were very few of the thirteen young gobblers shown but will make good specimens when matured The next class was hens, two years and over; 8 very fine ones were shown and the first prize was as fine a specimen of a hen turkey as I have ever seen in my 48 years experience in the breeding of Bronze Turkeys. For weight, plumage, and good quality in every way she would be hard to beat. The second was a fine hen also, plumage grand and had she been a little heavier would not have been much behind the first. The others were all good, and were a credit to the breeders. In the next class there were 8 entries. The first hen was a particularly fine one and will make a grand show bird by another year, good plumage, good wings, well barred, and in every way a first class hen. In pullets there were 12 entries, all of good quality, in fact the show of young Bronze turkeys was very good.

In the White Holland we had 32 entries The first prize old gobler was a beauty, and had very clean, white plumage, beautiful lobes and fine length, good breast and back, the others were also good but smaller and finer in bone. In fact the White Holland turkeys seem to be getting finer in bone and smaller in size every year. We want to get some fresh blood. I am afraid there has been too much in-breeding. They ought to change their gobblers oftener. The first prize hen had fine plumage, but was not so large as I have seen them at the "Ontario" show in previous years.

In the A.O.V. class there were some magnificent Black turkeys shown and also a few good birds of the Slate variety. The first prize Black aged gobbler was as fine a bird as I ever saw, almost as heavy in the bone as a Bronze, in fact they had been crossing them with the Bronze to get the size as they are certainly finer in every way than the old Black turkeys we had years ago. The plumage may not be so jet black, but it is certainly an improvement in both size and quality of flesh, and it has done good to have given them a dash of Bronze blood which I am sure they have had. There were some good specimens of the Slate variety, and fine, large birds they are, with fine, full breast. They claim the quality of the meat is equal if not superior to the White Holland which has always been considered the most delicate and whitest meat of the different breeds of turkeys.

OFFICERS AND COMMITTEES FOR ONTARIO PROVINCIAL WINTER FAIR, 1909.

Honorary President ..... ARTHUR JOHNSTON, Greenwood.
President ..... Lt.-Col. R. McEWEN, Byron
Vice-President ..... JOHN BRIGHT, Myrtle.
Secretary-Treasurer ..... A. P. WESTERVELT, Toronto.

Directors.—Lt.-Col. R. McEwen, Byron; John Bright, Myrtle; Wm. Smith, Columbus; John A. Boag, Queensville; James Henderson, Belton; J. M. Gardhouse, Weston; Arthur Johnston, Greenwood; W. W. Ballantyne, Stratford; R. S. Stevenson, Ancaster; A. W. Smith, M.P., Maple Lodge; John Jackson, Abingdon; Robert Miller, Stouffville; Prof. G. E. Day, Guelph; Wm. Jones, Zenda; G. B. Hood, Guelph; R. H. Harding, Thorndale; Wm. McNeil, London; A. W. Tyson, Guelph; L. H. Baldwin, Toronto; W. Tregwin, St. Mary's.

Executive Committee.—Lt.-Col. R.McEwen, Byron; John Bright, Myrtle; Wm. McNeil, London; W. W. Ballantyne, Stratford; Wm. Jones, Zenda; Wm. Smith, Columbus; A. P. Westervelt, Toronto.

Committee on Horses.—Wm. Smith, Columbus; John Bright, Myrtle; A. G. Gormley, Unionville; W. Renfrew, Toronto; T. A. Graham, Claremont; Jas. Henderson, Belton; R. E. Gunn, Beaverton; A. E. Major, Whitevale; Jno. Gardhouse, Highfield; E. C. H. Tisdale, Beaverton; Jno. A. Boag, Queensville; J. M. Gardhouse, Weston; Wm. Hendrie, Hamilton; Dr. R. E. Webster, Ottawa; J. G. Hanmer, Brantford.

Committee on Cattle.—John Bright, Myrtle; A. W. Smith, M.P., Maple Lodge; Arthur Johnston, Greenwood; Robert Miller, Stouffville; John Tyson, Guelph; W. W. Ballantyne, Stratford; R. S. Stevenson, Ancaster.

Committee on Sheep.—John Jackson, Abingdon; Jas. Tolton, Walkerton; A. W. Smith, M.P., Maple Lodge; Robert Miller, Stouffville; James Millar, Guelph; Lt.-Col. R. McEwen, Byron.

Committee on Swine.—Wm. Jones, Zenda; Prof. G. E. Day, Guelph; G. B. Hood, Guelph; R. H. Harding, Thorndale; J. E .Brethour, Burford; John Barber, Guelph.

Dairy Committee.—W. W. Ballantyne, Stratford; Prof. H. H. Dean, Guelph; R. S. Stevenson, Ancaster; John McKee, Norwich.

Poultry Committee.— Wm. McNeil, London; A. W. Tyson, Guelph; W. R. Graham, Guelph; L. H. Baldwin, Toronto; R. Oke, London; W. Tregwin, St. Mary's; J. H. Saunders, London;

Judging Competition Committee.—Prof. G. E. Day, Guelph; A. W. Smith, M.P., Maple Lodge; J. E. Brethour, Burford; John Jackson, Abingdon; W. W. Ballantyne, Stratford; Robert Miller, Stouffville; R. W. Wade, Guelph.

Seed Committee.—G. A. Putnam, Toronto; Prof. C. A. Zavitz, Guelph; L. H. Newman, Ottawa; John Barber, Guelph; G. B. Hood, Guelph.

Reception Committee.—J. P. Downey, M.P.P., Guelph; Hon. Jas. S. Duff, M.P.P., Toronto; Hon. Nelson Monteith, Stratford; Mayor Hastings, Guelph; Arthur Johnston, Greenwood; Dr. J. G. Rutherford, Ottawa; A. W. Smith, M.P., Maple Lodge; G. C. Creelman, Guelph; John Newstead, Guelph; A. W. Tyson, Guelph; Lt.-Col. R. McEwen, Byron; J. M. Duff, Guelph; H. Guthrie, M.P., Guelph; J M. Struthers, Guelph; Chairman Reception Committee of Guelph City Council; President, Guelph Board of Trade.

Superintendent of Buildings. D. G. Hanmer, Burford.

Assistant Superintendent.—J. H. Saunders, London.

FINANCIAL STATEMENT OF THE PROVINCIAL WINTER FAIR.

Receipts.

Legislative Grant	$6,300 00
Prince of Wales prize	50 00
Gate Receipts (including fees from Farmers' Institutes)	1,761 60
Advertising in prize list	440 00
Canadian Seed Growers' Association prizes	172 00
Dom. Shorthorn Ass'n. through Dom. Cattle Breeders' Association	490 00
Galloway Breeders' Association, special prizes	30 00
Canadian Ayrshire Ass'n. through Dom. Cattle Breeders' Association	53 50
Holstein-Friesian Association, special prizes	30 00
Dominion Swine Breeders' Association grant	75 00
Ontario Berkshire Breeders' Society grant	40 00
Ontario Yorkshire Breeders' Society grant	200 00
Citizens of Guelph, special prizes	150 00
Milk sold from Dairy Department	126 15
Dressed poultry sold	73 72
Swine carcasses sold	931 51
Live poultry sold in selling class	93 50
Seeds sold, 1907	4 40
Special cash poultry prizes	490 90
Prize money overpaid and refunded	10 00
Sale of Catalogues	25 00
Fees	3,065 30
Refund by exhibitors of freight and express paid	16 16
Miscellaneous	4 72
	$14,633 46

Expenditures.

Balance due Treasurer, January 31st, 1908	$437 02
Directors' and Committee expenses	429 23
Judges and judges' clerks	693 60
Lecturers and expenses public meeting	196 50
Block test	132 80
Dairy test	30 00
Office help	334 02
Balance help, 1907	136 30
General help (including Superintendents), 1908	892 01
Prizes paid	8,427 75
Police services, 1907 and 1908	50 00
Printing and advertising	1,179 63
Postage and stationery	283 99
Telegraph, telephone, interest and express	85 87
City of Guelph, payment re building	260 00
Lighting building	128 98
Fuel	90 12
Cartage and rent of chairs 1907 and 1908	76 89
Straw, shavings and fittings	151 79
Feed for poultry	55 19
Dairy exhibitors' milk sold	127 15
Dressed poultry sold	73 72
Swine carcasses sold	931 51
Birds sold, sale class	93 50
Seeds sold, 1907	5 05
Freight charges advanced for exhibitors (afterwards refunded)	10 11
Auditor	15 00
Miscellaneous	13 65
	$15,341 38
Balance due Treasurer, January 31st, 1909	$707 92

Examined and found correct this 25th day of March, 1909.

(Signed) W. G. Lindsay, *Auditor.*

(Signed) R. McEwen, *President.*

(Signed) A. P. Westervelt, *Treasurer.*

EASTERN ONTARIO LIVE STOCK AND POULTRY SHOW, 1909.

The Show for 1909 was held at Ottawa on January 18th to 22nd. Previous to the Show the City of Ottawa remodeled the Howick Pavilion whereby splendid accommodation was made for a horse department which was added to the show. This department, as well as the other departments of the show, was well filled with exhibits of high quality. The attendance was almost double that of any previous year and visitors were enthusiastic in their appreciation of both the exhibits and addresses.

On the afternoon of Tuesday, January 19th, the show was honored with a visit from His Excellency, Earl Grey, Governor-General of Canada who also further showed his interest in the exhibition by entering some of the horses from his stables.

PUBLIC MEETING.

A public meeting was held on Tuesday evening at which the addresses following were delivered. The President of the Show, Mr. Peter White, K.C., Pembroke, presided and opened the meeting with the following remarks:

As President of the Association that is responsible for the existence of this Fair, it is with extreme pleasure that I see here what may be called the largest audience which has ever assembled in the history of the Ottawa Winter Fair upon an opening night. There are, as you are aware, a great many things to be overcome in creating enthusiasm and gathering together crowds of people to be addressed upon subjects which pertain peculiarly to Agriculture, and that is particularly usual in the case of a city audience. However, it is with a great deal of pleasure that we see each year that the audience upon opening night gradually increases, therefore we must only conclude that not only the people of Ottawa, but the farming community of Eastern Ontario are taking a very increasing interest in this exhibition, which is being made to stimulate an interest in improved methods of farming in the eastern part of the Province.

When I was asked to take the position which I now occupy as Executive head of this Institution, I told those who were urging the position upon me that it would be absolutely impossible for me to take it unless we had a Horse Show in connection. Somebody said we never could get a building, and then it suddenly occurred to someone that the Howick Pavilion was available for that purpose. When a proposition was made to the Board of Control, of which the Mayor was then a member, the plan had a no more hearty endorser and got the sympathy of no one more heartily than Controller, now Mayor, Hopewell. I am sure we can not only congratulate him in occupying the position of Mayor of the Capital City of the Dominion, but we may congratulate ourselves that this Association has in him such a true and tried friend.

Thanks to the Council of the City of Ottawa, we have a building the like of which does not exist anywhere on the American Continent, that is to say, among buildings which are designed for the purpose of holding exhibitions entirely and purely with the idea of benefiting the farming classes of the community.

We will have the pleasure this evening of listening to speakers of very great note, men who are eminent in their various walks of life, and I am sure you would not appreciate any remarks of an extended nature from me.

I now have much pleasure in calling upon Mayor Hopewell to address you.

ADDRESS.

By Mayor Hopewell, Ottawa.

It is with extreme pleasure that I welcome your association to this city to-day. I have gone about the building looking at the Exhibition and I can say that in every respect this show is a magnificent success and I only hope that every exhibitor will go away from here with the full intention of returning next year, well pleased with the treatment he received and delighted with the whole Exhibition. My hope and my belief is that not one disgruntled person will be found when this Exhibition closes.

We have had our ups and downs in connection with this building as most of you know. It has had two or three bad falls, but I want to say that this Winter Exhibition and Fat Stock Show is not going to be allowed to fall down, at least not if I can help it. I am not given to making promises but do you know, sir, I am given to building castles in the air and sometimes circumstances do not compel me to be intensely practical, and do you know, sir, that people who never build castles in the air seldom build anything. What I have in my mind and the vision I have before me is that in another year or two at the most, we shall see the floor of this Poultry Department extended over this stage and the room increased about 25 per cent, I understand they are already cramped for room and a gentleman who exhibits poultry said to me yesterday, "We are the big end of the show." I do not know whether I should concede this or not, but I would concede this at all events,—they are the noisy end of the show.

I will not take up your time by giving a long address. It is enough for me to say I have always been and am still in hearty sympathy with this Exhibition and I think if a little more publicity were given to the Show, the citizens of Ottawa would turn out in greater numbers to patronize it. If we could only instil into the minds of the citizens of Ottawa what a magnificent asset we have in this Exhibition and in this building, I am sure they would take great pride in it. I am not always sure that the best way to gauge the value of anything is by the money returns. This Exhibition is an educational factor and increases educational facilities in this country and in this way it is one of the best institutions and best assets that the City can have. I think the more intelligent the rural population becomes the better it is for the City and I hope this institution will become more and more an educational factor, educating the population of the rural district to produce better live stock and poultry and to develop our farmers in intelligence and integrity. I think if we measure the success of this institution in that way, we will have to admit it is a great asset to the City of Ottawa.

On behalf of the citizens of Ottawa, I bid you welcome. I hope that everyone who comes here will go away with the impression that Ottawa is willing to spend the money on the education of the people and that in this show you will have found ample room to develope it and that you will get here an education that you could not get elsewhere.

I thank you for the honor of asking me here to-night to bid the strangers welcome to the city and I think I may as you request, offer you the freedom of the City of Ottawa. I have no doubt that none of you will take advantage of this offer to missuse the privilege. I am an old County of Carleton boy myself and I have confidence in the people in the surrounding district and therefore I offer you without any restriction the freedom of the City.

ADDRESS.

By Dr. R. A. Falconer, President of the University of Toronto.

You may think it strange that I have travelled all the way from Toronto to-day, and have to return again to-night in order to take up the incessant duties of the University to-morrow morning merely for the sake of saying a few words to you at the opening of this show, and yet, when Mr. White wrote me, although at first I was reluctant because of the pressure of duty to leave home, I felt on further consideration I should certainly make an effort to come, and now that I am here I am very glad that I have been able to come. The glimpse I have had of this show is not sufficient, of course, for me to pass any encomium upon it, and yet as I came through the building I was particularly struck by the fair appearance of the buildings, and I hope I am justified in believing that the things that are contained in the building are of the same high order as the place in which they are housed.

There are several reasons why one is anxious to come to this gathering to-night, and the first is because I believe in the University. We must show the people of the Province that we are able to do something for them, that we are their University and that we must come into touch with them in as many ways as possible.

You ask in the first place, How? Well, of course, you support the University very generously. The Province is giving us a large amount of money. Who are the people who come to the University? They are your sons and daughters. Probably we have some sons and daughters of men and women who may be sitting in these seats before me. Two-thirds of the students of our University come from outside the City of Toronto; it is a Provincial University. These people come to us from all over the Province. What do they come for? I am not going to keep you too long on this subject. They come, we believe, from your homes in order that they may be fitted to go back into this Province and into this Dominion and be better citizens and be able to contribute to you and your homes something that you would not otherwise have. They should leaven the whole surroundings so that by reason of their having had the advantages of a University education, the situation in our towns, in our villages, and in our country-side, may be constantly getting better and better. They should add interest to the life in which they live, they should bring in new ideas, and they should give you something of these things that they themselves have received.

We send out lawyers, but not so many lawyers, because they come from Osgoode Hall; they get their degree from us. We send out doctors, engineers, and men into every profession, the ministry and teaching, and almost into every department of life; and more and more the work that we do in the University, is work that comes home directly to the people of the Province.

You say that you have no son in the University or no relative, and that you do not expect ever to come into touch with it; but every time that you entrust yourself to a doctor's care you are really relying on the kind of teaching that is being given in these centres of education. Every time that

some great building is put up, it is put up by the skill of men who are educated in these centres. Every time that you travel in a railway train you go along a track that has been laid by men who were educated at these centres and who know how to lay railway tracks. The better doctors you have and the more skillful engineers you have, the safer is your life, and the more comfort and the more security can you feel. So you cannot simply brush the great University aside and say, "I have nothing to do with it." It is bound to come home to you. More and more is this becoming the age of experience. You are trusting yourself and your safe keeping to the people who are being trained as experts, and you should be proud that your money which is being put into the University has greatly improved every side of our professional life.

It is from the farming population, not only in this Province, but in all the Provinces that we get the largest proportion of our best students. I am safe in saying that. That has been an old experience. You can question students of almost any University in this Dominion and you will find that it is the quiet, strong, intellectual moral homes out in the country, where the boys have had to be alert, where they have had to do work, where they have had to adjust themselves to new situations, where they have had to get what they have got by their intelligence and by their toil, where they have had high ideals,—it is from these quiet, strong, healthful homes that the towns are recruited, that the cities are recruited, and especially that the Educational Institutions are recruited; so that every President of a University should feel most thoroughly at home among a gathering of men and women who are directly associated with Agriculture.

That leads me on to say I feel a pleasure in being here to-night, also because I am persuaded that the well-being of this Dominion will depend in the future very largely on the quality of the men and women on the farms throughout the country. I am not saying anything that I do not absolutely believe. We may think a great deal of our manufacturing; I do value highly our manufacturing. We may think a great deal of building large cities; it is desirable that we should have certain large cities, but not too large. I hope we shall never have tremendous cities; cities of moderate size would be far more healthful. We ought to have good towns and people must congregate there, but unless behind all that there is a great body of people living on the land, living in comfort, doing their daily work there, thinking hard and living moral lives, then woe to us in the cities and in the towns.

In the cities wealth develops fast. Only wealth? Not by any means. Wealth and poverty; the two go together. Great manufacturers do you say! Only splendid articles turned out? No, you see the droves of men and women coming out at the lunch hour and coming out in the evening, bent with their toil and pale with their work, shut in as they have been day after day, working hard for a pittance, many of them. That is what you see. Manufacturing is necessary, but manufacturing has its drawbacks. For health, strength and time, where do we go? You go to the country, to the open air, where you can see the blue sky, where you have a large space over which you can roam, where you have a roomy house in which you can live, where you never fear lest you shall be in want. You do not know what want is in the country. It is from the country that comes much of our stamina and our strength and unless we have these the town population will by no means equip us for the problem which lies before us as a people.

Therefore, it gives one a great pleasure to come and address a body of men and women whose life is on the farm, out in the open, who work for what they get and who are free from the dragging cares of the city. That is a healthful life, and breeds healthful, strong men and women.

Another reason why I am glad to be here is this; This is an educational place. Here a body of people are being educated. What does education mean? Education is not cramming in a lot of facts. You have met a great many people who know everything, and they leave no impression on you at all; they can tell you everything but what you want to know. A large amount of unrelated information lies around about them. That is not education. An educated man or woman is a man or woman who has his or her powers so developed that he is able to use them in the best way possible. There are different kinds of education. There is the educated minister, the educated doctor, the educated engineer, the educated lawyer, the educated mechanic and the educated farmer. The same kind of process is not used in all cases. One kind of education or training brings out one type of man. The man studies his professional work, but in every case true education is supposed to develop the powers that each one has.

Education should mean this: That you and I have studied what we can do, and have bent all our energies to do it, and are growing more able to do it every day. A man's education does not stop until he is dead. He is a dead man if he has stopped growing; he is a useless man, she is a useless woman, unless he or she has learned a bit more every day and is a little better fitted for the work in which Providence has placed them and set their lives. So I look upon a gathering of this kind as educative. How? It directs your attention into ways in which you may develop. You know if you put a good farmer into a community he is of educative value, not because every man copies him, but because he stimulates every man to ask himself, "What is the difference between us, why cannot I do what he is doing, or rather, why cannot I do something better than what he is doing?" Not a case merely of imitation, but a case of development through example.

You see around you examples of what may be done. I am perfectly persuaded that as you look back over the history of Ontario you will discover that the population of Ontario has gradually been going up and up. Why? Largely through educative ideas that have been penetrating into the minds of the people on the land.

The College at Guelph, with which Dr. Mills was so long connected, has had a vast influence in that way, and the farming population is seeing something beyond what they had dreamed of, and every opportunity of this kind is an opportunity for men to grow, even it may be, if they are in middle life.

What are we aiming at as a people? Well, I think three words in a motto of one of our cities of Ontario may be fitted in here well to show the aim and purpose we should set before ourselves. We should aim at Industry, Intelligence and Integrity.

Industry. In our farming population there is plenty of scope for Industry, and I should not say that by any means in Canada we lack Industry; in fact, I often believe that the rigorous climate in which we live and the necessity of our always having to work here for what we get, has given us vigor and power over other people who live in milder climates and in the countries which do not require the same effort for production. I lived as a boy for a good while in the West Indies, and I know how rapidly things grow there and the productivity of that soil; but I am absolutely certain that we who have to strive and struggle in order to get our results, are developing strength of manhood and energy that the people who are in the south can never get. I am absolutely certain that the future belongs to the people of the north. Although we may think our winters are hard, although in the morning it is difficult to get up and dress in this cold, and we shudder and wonder when March will be over and April begin to show us a sign

of fine weather, yet all this cold has toned us up and given us strength and power and energy which have entered into our manhood and which must tell in the long run.

I believe then that the very environment in which we are situated is a splendid thing for our future, and that we can rely upon it that we are going to develop in Industry, and that strength will be ours. Industry, then, should be our motto. It is astonishing, how soon the result is manifest if we do things regularly and in order, if we put our best into our daily work. How quickly the whole tone of this Province has changed. If you go to sleep and wake up like Rip Van Winkle, even aften ten years, you will be astonished at the growth there will have been of intelligence and industry.

That leads me to the second remark, that mere industry is not sufficient. Along with industry we must have intelligence, and the farming population of this country are growing more intelligent. I believe taking them as a whole, there is no part of our population more intelligent, but also that intelligence must develop. Men and women must think; it is thinking power that makes us what we are. It is when we stand and consider and ask. "How are we to do that thing?" It is as we do that we begin to grow and get intelligence, and intelligence behind power makes a vast difference.

I have of late been reading over again the story of the war down South of 1860-1864. I have been reading the letters of General Lee, that genius, the great general who in spite of his misfortunes, has left such a marvellous record behind him; also the life of Stonewall Jackson, his able lieutenant, and I have been looking with a vast amount of interest at the way in which these two men inspired their soldiers; how, when small in number and poorly equipped these men were able to hold at bay the immense armies of the North, armies that multiplied their own several times, armies better equipped and with far vaster resources. Why was it? It was because the armies of the South had two men of genius. It was not the multitudes of the North that conquered; it was not that immense mass of power. What did these men of the South do? Lee and Jackson would watch and there would be some great general of the North coming down with an army twice their size, a boaster perhaps like General Pope, who told his men what he was going to do, how he was going to annihilate these men of the South; but Jackson, with his small band of men, knew the ground and knew the man he was opposed to, and before Pope realized it Jackson was away in his rear and had burned up all his stores and cut his communications, and the first Pope knew of it was the smoke in the distance. Then off Jackson went and escaped as this lumbering army came after him. What was the difference? Not the difference in power, not the difference in energy; the soldiers of the North were just as strong as the soldiers of the South; it was a difference in intelligence. You may depend upon it to the end of the chapter that it is not the man with the great strong right arm only, who is going to win victory, but it is the man who stands and thinks. The farmer who stands and thinks for a while and grows in intelligence, is going to get things done on his plot of land that another man may spend a fortune on to get done, and they will not be done nearly so well. So work intelligence into industry. It is from that intelligent population that the life of our community as a whole will be recruited.

The last idea which I wish to leave with you before I sit down is this, that along with intelligence must go integrity. That was the third word in the motto, and integrity is equally valuable with the other two. We need the type of man who can be depended upon and who is not so foolish as to think that if he goes on cheating, he won't ruin his character. It requires

a great deal of intelligence to get into some people's heads that it is as true a fact as can possibly be that lack of integrity and doing under-hand, mean things will bring evil consequences in trade just as certainly as the sun rises in the morning and sets at night.

Integrity in farming is one of the things that we need from side to side of this Dominion. I am not casting any slur on the farming population, but certainly if we can only get our name through the length and breadth of the civilized world on such a high pinnacle that wherever Canadian stuff goes it goes with the reputation that can be trusted, then we shall have a national asset second to none. We have something that will be relied upon and the future of our nation will be assured. Certainly it is from homes of that kind that we shall have a never ceasing stream of men and women who will build up our country.

How many of us have known old men and women who, in their spare hours turned their attention to great books and read and thought? How often have you been surprised at the outside of a man, but you have by a little talk discovered that there is really a great man hidden away there. He is perhaps in some little house. What did this great man do with his spare time? He used it, he thought, he read. Did he come to much? No, not very much. What about his son? Why, his son may be a Judge in the Supreme Court here for all I know, or his son is down in Toronto, or he may be over in England or in India or China. It was the old man back there of whom the world knows nothing, who sat still in his home and read his books from whom the sons came. Men and women unknown, building up strong lives of integrity, intelligence and industry, are preparing these people for us.

There is one fear that I have and that is this,—that as times are so good, and prices so high, the farming population may begin to think that success in life has to be measured by the number of acres, even the brick buildings in which men live, and by the barns and stock. The danger is lest we should forget that, after all, good as these things are and much as we look forward to increasing comfort in this country, there are bigger things behind, and the biggest things on the farm are the men and women who live in that house, and the boys and girls who go to school. Bearing this in mind, at the same time as our material comfort is developed, our true manhood will grow, and as Canadians we shall be a people who will be represented in the councils of the earth. As our great Milton said, "Virtuous education makes the bonds and the ligaments of the commonwealth." It binds the people together and makes them strong. Virtuous education among the people based on industry, intelligence and integrity is the pillar on which our constitution rests.

ADDRESS.

By James Mills, LL.D., Ottawa.

I was glad to receive an invitation from your President to be here this evening to hear Dr. Falconer and other distinguished men address you, including our Minister of Agriculture and Senator Derbyshire, who is so well known throughout the eastern part of the Province,—in fact, all over the Dominion.

What can I say to the people assembled here? When I come into a gathering such as this, I cannot help saying to myself: "These are my

people." I know the farmers of Ontario pretty well; and whenever I meet them, I have a different feeling from what I have when I meet any other class of our Canadian citizens.

I am glad to have an opportunity of appearing before a number of the representative live stock and poultry men of the eastern part of the Province, and some from the central and western part of the Province as well. I congratulate them on what they have done for themselves and for the country at large. I think a show of this kind has great educational value, especially for young farmers. I agree with Doctor Falconer that no class of people needs education more than the farmers; and I appeal to the younger men here this evening—and I am glad to see that perhaps the larger portion of this audience is made up of young men and young women—I appeal to them to buckle down to the work and let nothing escape them. I have had a motto before my mind for some years, and I want them to consider it carefully: "NOT WELL ENOUGH, BUT THE BEST POSSIBLE IN EVERYTHING."

The average man as a rule is not a great success. We want men who are determined to make their mark in some line. Take this thought home with you,—in the cultivation of the soil; the selection of seed; the growing of crops; the selection, breeding, feeding, and care of live stock—cattle, horses, pigs, sheep, poultry, etc.;—and in everything else to be done on the farm,—"Not well enough, but the very best you can do."

Such a motto should be adopted by dairymen as well as by the men who are raising horses or breeding and fattening cattle, sheep, and swine. The man or boy who works according to the wages he gets, will never get high wages; but the man or boy who does the best that is in him, regardless of the wages, will ultimately become a leader in the community.

We may congratulate ourselves on the fact that the President of our great Provincial University has thought it worth while to spend an evening with us; and I congratulate the directors of this Eastern Show on having at their head a University man, Peter White, B.A., who is not only a scholar, but a successful farmer,—a breeder and feeder of cattle.

I ought not to occupy a minute more of your time, because we have with us the Minister of Agriculture for Ontario, whom we are all anxious to hear,—a man from my native place, the noted County of Simcoe.

"Not well enough, but the best possible in everything."

ADDRESS.

By Hon. J. S. Duff, Minister of Agriculture, Toronto, Ont.

I am pleased indeed to have the privilege of being with you to-night. Apart from the interest I have taken in this Show, apart from the fact that I am glad to be here on account of the Show, I am glad to be here to have had the privilege once more of listening to Dr. Falconer, President of the Toronto University.

It was my privilege a little over a year ago to hear Dr. Falconer address a very large audience of farmers and their friends in the City of Guelph, and the thought came to me then, and it has been more forcibly brought home to be to-night, that this is the sort of thing we want if we are to become a great country such as our resources warrant. We have not had in the past the community of interest between the university people, the city people and the country people that should prevail, but this Show

which is such a success in the City of Ottawa is perhaps doing more to bring the people of this great City of Ottawa more closely in touch with the agricultural interests of Eastern Ontario than anything that has occurred for some years.

It appeared to me, after having gone through this Show that apart from the interest that the agriculturists may take in the Show and apart from the interest those who have gone to a great deal of trouble to bring these exhibits here and show them in the splendid manner that has been done, apart from all that, the people who are really the most benefited and who should show their appreciation of the efforts of the exhibitors, are the people of this beautiful City of Ottawa. What would the City of Ottawa or any of our cities be were it not for the farmers? If the people of the cities are to have that appreciation of their work which they expect from the people of the rural communities they must in turn understand that the rural communities will expect some appreciation on their part of the work being done by the agriculturists.

We have had the pleasure to-night of listening to Dr. Mills, a gentleman, who, perhaps, has done more for the benefit of the agriculturists of Ontario than any other one man, at least during a generation. From an agricultural standpoint no greater tribute could have been paid to us than the fact that when he left the Presidency of the Agricultural College at Guelph, he was transferred to a somewhat higher sphere, to a sphere in which he certainly can do as much for the agriculturists of Ontario as in any position he has yet occupied. I think it was a splendid tribute to the agriculturists of the country, because you know there has not been that feeling of good-will between the farmers and great railroad corporations that we would like to see exist. We feel satisfied, however, that in the person of Dr. Mills we have at least one man on the Railway Commission who will do what is fair and right between the corporations and the farmers who have business with them. He is discharging one of the duties that is a necessary part of that community of interest which must exist between farmers and the citizens of our towns and villages if we are to be the contented and prosperous people that we ought to be.

I wish to express the great pleasure it has been to me to go through the Show and see the exhibits. The President of the Show and those who have been associated with him are to be congratulated on the success they have attained, because they have had an up-hill fight in endeavoring to establish a really good show in the eastern part of the Province.

Many people who come here simply to see the Show without the expectation of being especially benefited will find themselves wondering how the different exhibits were bred, cared for and fed to bring them to such a degree of perfection; they will watch the awards being made and hear the reasons of the judges for placing the animals as they do; they will listen to the practical addresses to be delivered in this Hall and then each one should feel determined to do better things.

Unless all our fairs, from the National Exhibition held in the City of Toronto down to the smallest fall fair in this Province, are of an educational value to the sections in which they are held, then they are held in vain. What is the use of bringing exhibits together unless it inspires our people to go on and do better? It we are to be true to the trust reposed in us, and if we are true to the position in which we find ourselves owing to the integrity, intelligence and hard working industry of the pioneers who came into this great Province of Ontario if we are to be true to our traditions, then we must, after this Show is over, go home determined in some way or other to be better farmers and to raise better live stock.

I wish to say that the gentleman who have had the honor to represent the people of this Province in the position which I now occupy since we first had a Minister of Agriculture have been imbued with the idea of giving the best in them, according to the means at their disposal, to help the agricultural industry of this Province, whether it was Mr. Drury, Mr. Dryden, or my immediate predecessor, Mr. Monteith. However, we may fight each other when the elections are on or however we may line up in battle array, when the party call is sounded, once the elections are over we forget the partisanship and are imbued entirely with the idea of doing that which is best in the interest of the whole community.

I wish to congratulate you, Sir, on the great success that has attended your efforts in the holding of this splendid fair.

ADDRESS.

By Senator D. Derbyshire, Brockville.

I have been particularly pleased to see we have a larger audience this year than we had last, and I am sure you must be all very much gratified with the addresses which you have just heard. I have been highly pleased with the head of our educational institution in the Province of Ontario. I am sure it augurs well for the Province of Ontario that we can get men such as Dr. Falconer to come and speak to the farming community and give them ideas about what ought to be done in connection with extending our education.

I was more than delighted with Dr. Mills. I have always been an admirer of his. I remember attending the Agricultural College and hearing one of his addresses, and I went home at once and packed my boy off to the Guelph College so that he would be under that man, so that he would make him useful in this world, and I am sure I have never regretted in the least having sent my son to the Agricultural College.

If we could only get the young men to go to the Agricultural College so that they could take their place as trained agriculturists the same as doctors take their places, the lawyers and other professional men! Why not have these men on the farm trained for the work that they have in hand so that they can intelligently take hold of this work and press it forward with more intelligence and greater zeal than ever in the past. You know we have these lawyers stumbling around and starving in the cities, and these ordinary ministers of the Gospel that cannot preach a decent sermon if you would give them all the world. We have men in the professions that were never adapted for the business, and if we could only send them to the Guelph College and train them for business that they could do, if Dr. Falconer, who is president of our big college in Toronto, when he sees a man not adapted for the profession would say to him, "You go straight home and take hold of the plow, do not sit around here; you never can do anything in the professional life," and he would get him back on the farm, it would be a great deal better. Men are tumbling over one another to-day into these high positions, but there is no place like the farm. I would like to know what business would be more instructive to any man to-day than making two blades of grass grow where one now grows, by using more intelligence, and by making two grains of wheat grow where one now only grows, by selecting the seed, picking the big heads and intensely cultivating the soil.

You can find in every factory where they are sending milk in Eastern Ontario that they have men who are sending $70.00 worth of milk per cow to the factory in a season, and there are men in that same neighborhood, their milk drawn on the same milk wagon, getting only $14, $16, $20, and $23 per cow. What is the matter? It is because they do not put intelligence into the business. There are men who are feeding cows and those cows never pay them for their feed. The weakest point of farm practice in Eastern Ontario to-day is the fact that the farmers do not give their farms sufficient cultivation; they do not preserve the fertility of the soil and keep the farm in such condition that it will grow bigger crops, and they have not grown the feed to feed their cows in the summer time let alone in the winter time; they have starved the cows, half the time they have not given them sufficient water and they have not put them in proper stables.

There is no time in the history of the world that milk is worth as much as it is to-day. Why are you standing behind a dry cow when that cow ought to be giving good milk for 10 months in a year? Take home these practical thoughts and see if you have not a boy you can send to the Agricultural College.

Two-thirds of the cheese made in the Dominion is made in Eastern Ontario, because we have the best class of people in Eastern Ontario that they have anywhere in the world, and I am glad to see the Minister of Agriculture down here to get an idea of the kind of people we have in Eastern Ontario. We want men to get out among the people and make themselves useful and just as they get in touch with the Agriculturists of this country; just so useful will they be to the people of this Province.

LECTURES ON PRACTICAL SUBJECTS DELIVERED AT THE EASTERN ONTARIO LIVE STOCK AND POULTRY SHOW, 1909.

THE PASTEURIZATION OF WHEY, ITS EFFECT ON THE QUALITY OF THE CHEESE, AND ON THE FEEDING VALUE OF THE WHEY.

By H. H. Dean, Professor of Dairy Husbandry, O.A.C., Guelph.

Several problems are now pressing for attention from the owners and patrons of cheeseries. For instance, an English correspondent of a Canadian trade paper recently said: "It is not to be denied that the business of exporting cheese from Canada, and importing into Great Britain, has been a losing game for those chiefly engaged in it, and the only people who have benefited in the business are the Canadian farmers. No one is going to quarrel with their view of the situation; . . . but the trade has now reached a stage when it is becoming a question as to whether it is worth while importing cheese at all, the results of the distributive trade on this side, at any rate, being so disappointing, and the Canadian exporting side of it also being unsatisfactory."

The writer goes on to warn "The Canadian" that "New Zealand" is becoming a formidable competitor; that they have a large make of English

cheese and that the British tariff is likely to be changed shortly to the disadvantage of the Canadian farmer. "These are points it is hoped your farmers will take into serious consideration."

The editor, commenting on the foregoing letter concedes, "that there has been very little profit of late, in shipping cheese to Great Britain." He further says, "It is also well known that the farmers of Canada have reaped the greater benefits through undue competition amongst the middle men, which left scarcely any margin for themselves."

The editor goes on to say that fall cheese ought to be purchased at "the lowest prices for one year, in order to insure profit" owing to the fact that the goods have to be carried for some time." His remedy is—"compel the farmer to carry the cheese, the same as hay, grain and other produce, so that shippers could fill their orders from stocks held by farmers in storage here, or wherever most convenient."

We have no time to argue the case at present, but would say, that it can easily be proved that the Canadian farmer has not been reaping undue profits from the cheese business, in fact, has scarcely been receiving bare interest on his investment and living wages for his labor.

Regarding the suggestion that farmers carry their fall cheese, we think it a good one if the farmers would do so and deal directly with British importers it would mean considerable more profit for them. Marketing problems are among the most profitable studies of the farmer. There are too many persons taking a slice of the profits of the producer, which also adds to the burdens of the consumer. Middlemen are killing the goose that lays the golden egg.

Other problems for the cheese men are, the manufacture of whey butter, and how to meet competition from town and city milk trade and from the milk condenseries.

We shall not discuss these questions at the present time, but take up somewhat in detail the problem of—

The Pasteurization and Feeding Value of Whey.

It may be well at the outset to explain what is meant by pasteurization and also what we understand by the term, whey.

Pasteurization means heating of a liquid (in this case whey) to a temperature of 140° F., to 185° F., and afterwards cooling the liquid. The term is derived from the name of a noted French scientist, Louis Pasteur, who devised the process known by his name. The object of pasteurization is to free the liquid partially or entirely of germ life. This is accomplished by means of heat—preferably moist heat, such as steam. Time and temperature are important factors in destroying minute plant life known as bacteria. A temperature of 150° F., to 160° F., for several hours, such as is the practise when pasteurizing whey, is as effective as a higher temperature for a shorter time. If the whey tanks are kept reasonably clean and are covered so as to retain the heat over night, the patrons ought to be able to obtain practically sterile whey the following morning. This means that the danger of spreading bad flavors to the milk or disease germs to stock on the farm through the medium of the milk cans, where whey is returned in them, is reduced almost to the vanishing point.

By whey, we mean the by-product, or what is left from milk after the rennet has coagulated or curdled the casein enclosing most of the fat contained in the milk, some of the other milk solids and a proportion of the water of milk. The feeding value of whey is largely found in the fat, and solids not fat. Of the latter, the chief constituent is milk sugar, which when

milk sours is changed into an acid, known as lactic. While the latter has little or no direct food value, it seems to exert a beneficial effect upon food digestion in older animals. For young stock, however, the dairy by-products are more valuable without the lactic acid. In tests made at Western Ontario factories, it was found, that whey unpasteurized contained from 1 to 1.7 per cent. lactic acid, whereas whey pasteurized, contained but .4 per cent, acid and in some cases as low as .25 per cent.

There is another beneficial effect of pasteurization in that it prevents the fat separating from the other solids and the liquid, thus insuring an even distribution of the fat contained in the whey among all the patrons and preventing that greasy mess in the whey tank, or in one or two patrons' cans, which is an abomination to those who have to wash tank or cans.

During the season of 1908 we conducted rather extensive experiments at the O. A. College regarding the whey butter question, details of which can be found in the Annual Report of the College. In conjunction with the Animal Husbandry and Farm Department, we carried on a series of experiments to ascertain the relative feeding values for hogs, of whey containing an average of about .25 per cent. fat, and similar whey from which the fat had been practically all extracted by means of a cream separator.

Professor G. E. Day has kindly furnished the following summary of the results with pigs: "Eleven pigs were fed ordinary whey and meal; ten pigs were fed separated whey and meal; and twelve pigs were fed water and meal as a check group. The experiment lasted 120 days.

On ordinary whey, the average daily gain per pig was 1.16 lbs.; for separated whey, 1.097 lbs.; and for meal alone, .7 lbs.

The feed consumed per 100 lbs. gain for ordinary whey was 269 lbs. meal and 747 lbs. of whey. For the separated whey it was 297 lbs. meal and 774 lbs. whey. For the group fed meal alone, it required 430 lbs. meal.

From these figures we deduce that if the value of separated whey be represented by 100, the value of ordinary whey would be 125, or 25 per cent. higher.

I may say that in this experiment, we found an abnormally high feeding value for both kinds of whey, and the only reason I can give for this state of affairs is that we fed a very small proportion of whey to meal. On an average we fed hardly two and three-quarter pounds of whey for each pound of meal, and it is a well known fact that where small proportions of dairy by-products are used, they give a much higher feeding value per 100 lbs., than when they are used in larger quantities. As whey is ordinarily used, a much lower feeding value per 100 lbs. would be obtained. In our experiment, however, we were anxious not to have any of the pigs put off their feed, and consequently we kept the whey down in quantity. Though the results show a higher feeding value for whey than normal, at the same time, I think that the method of feeding should not affect the comparison of the two kinds of whey."

Difference in Value per 100 lbs., of Ordinary Whey and Separated Whey.

Assuming that live hogs are worth $5.50 per 100 lbs., and that the meal cost $1.50 per 100 lbs., we have a value of 18.2 cents per 100 lbs., for ordinary whey, and 13.4 cents for whey from which the fat has been extracted, a difference of 4.8 cents per 100 lbs. in favor of the whey containing the fat.

This means that in a factory where the fat is separated from the whey, or where the fat rises to the top of the whey in the tank and is practically lost for feeding purposes, that the loss in feeding value is nearly five cents per 100 lbs. whey.

Looking at the whey butter question for a moment and taking the average of experiments made at the O. A. College during 1908, where the amount of whey butter made, averaged from 2½ to 3 lbs. per 1,000 lbs. whey, we can see that whey butter must sell for an exceptionally high price to give any profit. Assuming that the yield be 3 lbs. butter per 1,000 lbs. whey at 20 cents per lb., we have a value of 60 cents. According to the pig feeding experiments quoted, the difference in feeding value of ordinary and separated whey is 48 cents in favor of the unseparated whey, or only a margin of 12 cents per 1,000 lbs. whey for making the butter. As the price of the butter increases, of course the margin is greater, being 27 cents per 1,000 lbs. whey, if the butter sells for 25 cents per lb., and 42 cents if 30 cents be received for the butter. These facts may very well cause farmers and factorymen to consider carefully whether or not it pays to manufacture whey butter.

The estimated cost of pasteurizing whey at the cheese factory is from 50 cents to $1 per ton of chese. Considering the enhanced feeding value of the whey, the reduction in risk of spreading bad flavors and disease, and the greater ease with which the tanks and cans may be cleansed, we strongly recommend the cheese factory managers of Eastern Ontario to make the necessary provision for pasteurization of the whey during the season of 1909.

Effect on Quality of Cheese.

While the effect of pasteurization of whey upon the quality of cheese must be largely speculation, because no exact experiments have been made, we may reason that the effect will be an improvement. In Western Ontario the "bitter-milk" flavor and other undesirable flavors have almost entirely disappeared since the factories began pasteurizing the whey. This in itself has been of sufficient value to pay the cost of heating the whey. Owing to the increase of injurious bacteria in all our cheese factory sections, the problem of how best to control these becomes an exceedingly important one, and one which grows more important each year. The whey makes an excellent breeding ground for all low forms of life. Where the whey is returned to the patrons in the milk can, which is the common practice, and where the cans are not properly washed, which also is all too common, we can readily see, that infected whey means infected milk, which means poorer quality of cheese. A cheese maker cannot turn out a finished product superior to the raw material (milk) which is delivered at the factory.

To sum up, pasteurization of the whey means whey of greater feeding value and an improved quality of cheese.

Q.—Pasteurizing is quite sufficient, you would not recommend sterilizing?

A.—No, it is not necessary to sterilize because where the whey is heated for this long time, it practically sterilizes it, although we do not adopt the temperature that is really necessary for sterilizing.

Q.—After it is run out, you immediately heat it up to this 160°?

A.—Just as soon as the vat is dipped; our whey is now 98 to 100 degrees. If we allow it to stand some time it will cool, therefore it is better to commence to heat at once and take advantage of the high temperature just as soon as the whey is run off.

Q.—To sterilize you have to heat 212°?

A.—Yes.

Q.—The added expense would be for the fuel?

A.—The chief expense is the fuel. It would also depend to some extent on the distance your whey tank is from the boiler. A three-quarter inch pipe to the tank and the extra fuel needed to furnish steam is practically the whole expense.

Q.—What quantity of coil do you require around the vat?

A.—A three-quarter inch perforated pipe across the tank would be sufficient. I do not think it is necessary to put a coil around the tank. Most of the factories simply have a pipe going across the middle of the whey tank. There are other methods; in our own case we pasteurize all our skim milk and we use the exhaust steam from the engine. Where you use an engine you can utilize the exhaust steam. In our case it costs us practically nothing to pasteurize the skim milk, where we have an engine at the factory. If you send to the Department of Agriculture in Toronto you can get bulletin No. 143, which will give full instructions as to the utilizing of exhaust steam for pasteurizing purposes.

Q.—What is the feeding value of ordinary whey that comes from the factory?

A.—A great deal would depend on the price of pigs, etc., perhaps from 5 to 10 cents per 100 lbs. In our estimate we got 18 cents from the sweet whey, but that was rather high feeding value.

Q.—You say the value of whey not pasteurized, is 5 to 10 cents per 100 lbs.

A.—That is the estimated value.

Q.—You say that pasteurized whey may be worth 18 cents?

A.—We got that out of this experiment; I do not say that is the commercial value of sweet or pasteurized whey, but in this special experiment, we got that value, because we fed it sweet, which is much the same as if it had been pasteurized.

Q.—You got a value of 13 cents without pasteurizing?

A.—No, 13 cents where the fat had been removed: that is the same as where the fat rises on the tank without pasteurizing it, thus reducing the feed value. Pasteurizing keeps the fat distributed all through the whey.

Q.—You think the whey should be pasteurized every time?

A.—Yes, where the whey stands over night in the tank.

Q.—What is the difference in the value of the whey on top of the vat and in the bottom?

A.—If a lot were all taken from the bottom, it would make a difference of about five cents in the 100 lbs., because in the ordinary whey tank, the fat has nearly all risen from the whey in the bottom of the tank. The man that comes first gets very little fat; he gets the worst of it.

Q.—Would it not be better to stir that whey tank?

A.—Yes, it would be better, but it is difficult to get the fat mixed in, when it has cooled.

Q.—Will the whey keep after it is pasteurized?

A.—Yes, it will easily keep for twenty-four hours. The pasteurized whey returned to the farmers on the following morning has little or no more acid than when it was run off the vats the previous day, it practically remains stationary and the reason for that is, that the acid is the result of the growth of bacteria which have been killed by heating.

Q.—Pasteurizing of the whey would not prevent the fat from rising?

A.—Yes, it would. That is one of the troubles of pasteurizing milk for the city dairy business because the cream will not rise on that milk and the people think they are getting poor milk.

Q.—How often should you wash out the whey tank?

A.—Wash it every day if at all possible.

Q.—Sometimes our whey tank is not washed out for two weeks?

A.—I have heard of a case where the tank has not been washed out for two years.

Q.—I attended a meeting from this district where a man said to us their whey tank had not been cleansed out for eight years; or since the factory was built.

Q.—I would like to hear your experience as to the feeding of whey to poultry?

A.—We have tried it and we have concluded that it helps digestion, but as to the feeding value of the stuff itself, I would prefer that Professor Graham should answer that question.

Q.—Do you think this pasteurized whey is good for young calves?

A.—Yes, where farmers have fed it they have had very good results. You should start with a small quantity.

Q.—Do you think it would pay to put in a steel whey tank?

A.—I think a steel whey tank is the only suitable kind of a whey tank.

Q.—Would it pay to pasteurize whey and put it in an old wooden tank?

A.—It would pay, but I would certainly prefer to have a steel tank, and I would prefer to have it pasteurized rather than not pasteurized and put in a wooden tank

Q.—Where it is run through a separator, would you pasteurize the whey?

A.—Yes.

Q.—Is not it pretty nearly pasteurized after it comes from the separator?

A.—It is only 98° to 100°, and that is not high enough, if it is heated up to 140° or 150° that would be pasteurizing it.

Q.—How much does the separator reduce the feed value?

A.—We have found as a result of experiments that the feed value of whey is decreased 25 per cent. by separating the fat from it.

Q.—How much butter can you get from 100 lbs. of whey?

A.—From 1,000 lbs. of whey we have made 2½ to 3 lbs. of butter—3½ the most and 2½ the smallest amount. I understand some factories in the East have been making 4 and 5 lbs., and I have heard of them making as high as 8 lbs. I would come to this conclusion that either the milk is badly cared for or you have an incompetent cheese maker where you get 8 lbs. of butter per 1,000 lbs. of whey. There is something radically wrong where you get such a large amount of butter.

Q.—In our factory we only get 1½lbs.

A.—That is more like it.

Q.—What is the difference in value between whey butter and other butter?

A.—We have found the difference to be from two to seven cents a pound; when butter is scarce we can sell whey butter at two cents less than the price for regular creamery butter, but when butter is plentiful we have to coax dealers to buy it and we have had to take seven cents a pound less.

Q.—Is there any difference in the taste?

A.—I think there is quite a marked difference, some people think it takes an expert to tell the difference between whey and creamery butter, I would not think so. It is a second-rate butter.

Q.—How about the keeping qualities?

A.—We have found it has fairly good keeping qualities. We have not found that it deteriorated rapidly after being made. If kept at 40 degrees it will keep fairly well for a month or six weeks, but it is always second-rate butter.

Q.—Whey butter is winning the first prize at the Fair?

A.—Probably it was pretty poor butter that was against it.

WINTER FEEDING OF DAIRY COWS.

By J. H. Grisdale, Agriculturist, Central Experimental Farm, Ottawa, Ont.

I take it that my subject means the feeding of cows in milk, not feeding in a general way, but feeding cows from which you want to get all the milk possible. I shall try to condense my remarks as I want to take up some of the general principles.

The first thing that the farmer or feeder should consider in feeding dairy cattle is how to get them to eat much feed. The cow that does not eat a lot of food is not going to produce much milk. Some are more readily persuaded to eat freely than others and some make better use of their food than others. As you know, the cow, as well as the human being has her likes and dislikes so the great problem of the feeder is to study his cows so carefully as to enable him to persuade them to eat freely.

The next consideration is to see that the food is easily digested. If you can flavor the food so as to persuade the cow to eat a large quantity of it and then have a food of an easily digested sort then you will surely have a large flow of milk. The primary consideration is a large quantity of food and that food easily digestible.

The next consideration, and probably the consideration that is really most important is the composition of the food. The food must be of such a character that when it is digested it will furnish to the cow lots of elements which enter into the making of milk. If the food does not contain these elements, then the cow cannot make the milk, because the milk is composed of certain elements which must enter the cow through the food. If the food is too rich in elements for the production of fat then the cow will be persuaded to put on flesh to a greater or less degree.

There are thus three points which the feeder must consider in preparing his ration. First, to get the cow to eat large quantities of food; second, that the food be easily digested; third, that it be of the right kind.

The first consideration is the all important one. Get them to eat lots of it. How are you going to do that? The reason you yourselves will eat more at one meal than another is generally that the food offered is more palatable. You like the taste of it better; that is the reason the average cow eats more of one kind of thing than another. She likes the odor of it; it pleases her palate and she eats a large quantity of it; therefore in preparing any ration for dairy cows, that must be the primary consideration, palatability. Get the food so that it will taste good to the cow and have a pleasant odor then the cow will eat a very much larger quantity than where such is not the case.

How can we lend palatability to the food? How can we get the cow to like the flavor and the odor of the food we furnish her? The first way is to try and make it succulent. Get a nice juicy food. When the cow gets on grass she will eat and eat. Cows have been known to eat 100 lbs. of grass in a day. That is an enormous quantity of food and she ate that, not because she felt that she needed it, but because she liked it, and if we can get the same odor, the same flavor and the same succulency into the winter foods that exists in the June grasses then we are going to persuade our cows to eat large quantities.

How can we get succulency? In various ways. If you have no ensilage, sprinkle water on each layer of cut straw in place of ensilage and roots, and then sprinkle on it a little bit of meal and then another layer of straw and then meal. That is the way many dairymen used to feed their cows years ago, but that has been abandoned by the introduction of the silo and the large

extension of the root growing industry. We have given that system of feeding up almost entirely, and have gone in for roots and corn ensilage. There is nothing up to ensilage if it has mixed along with it a certain amount of straw; in addition to the ensilage one might feed a small amount of roots, turnips or mangels or sugar beets. We have found on the Experimental Farm that a ration consisting of about two parts of ensilage, one part of roots and a few pounds of straw, about one-quarter part straw, makes a roughage ration that is very hard to beat. The cattle will eat it ravenously, in fact it often looks as though they would hurt themselves eating this ration and that without our having added meal or anything of that kind to it to improve the flavor or change the taste.

We can improve that a little by adding a small amount of salt. Sometimes a tonic is advocated, we do not consider that advisable. If you have none of these things, as a last resort you might cut your feed and sprinkle on it a little bit of highly flavored meal of a little bit of stock food. I am not an advocate of stock food, but I believe if you are trying to force your cow, and you get some stock food that she likes, you can persuade her to eat a little more of the food and so improve your chance of getting a lot of milk. Stock food has very little or no value in itself, but I think it serves as a condiment, just the same as when you get soup that does not taste very well by adding some sauce to it, you can make it go down better and that is the reason I think stock foods may sometimes be of value. We have not found them of any food value at all.

Now, as to digestibility,—the foods which are palatable and which are succulent are also the foods usually most easily digested, and most easily taken up by the organs and made into blood and from blood into milk. Of all the foods you can give to the dairy cow, roots are the most easily digested and most palatable; therefore you have in roots a combination of digestibility and palatability, just the very thing we want. For the man who is feeding dairy cows there is no doubt that the addition of roots to the ration is invaluable. The digestibility of a ration may also be improved by giving the right kind of food. Some foods are difficult to digest, as for instance, wheat straw and some of the other coarser straws and poor hay. It takes a large part of these to furnish power to the digestive organs to carry on the operations. You must therefore get a ration of a high percentage of digestibility.

After digestibility comes the composition of the food. It should be of very high milk producing value, must contain elements that go to produce milk and the chief element for that purpose is protein. Clover hay contains a large amount of protein; mangels, sugar beets or turnips or sugar mangels and oats are also quite high in protein and are accordingly very valuable for dairy cows.

When we buy meal we should pay attention to the kind of meal we are getting and its composition. The meals which are most suitable are first, bran. It is valuable on account of its high digestibility and richness in protein. It possesses the three points I have mentioned; it is digestible, it keeps the digestive organs in good shape and it is rich in protein.

Next comes oil meal. Oil meal is undoubtedly one of the best foods any man can give his dairy cows and at present prices it is the cheapest food on the market. Oil meal has a peculiar flavor of its own that seems to be agreeable to the palate of the average cow and it has a flavor that persuades the cow to eat much more of the roughage with which it may happen to be mixed than any other meal that I know of, therefore it is one of the very best meals a farmer can buy. It is rich in protein and also easily digestible.

There are certain foods very palatable but they are not so rich in protein and are not so suitable for the dairy cow. For instance I might mention barley; cows like ground barley and corn meal, but it is not advisable to give them these two foods in very large quantities. If you feed oil meal and bran in large quantities, the addition of a small amount of corn meal or barley will not do any harm.

Oil meal is very highly digestible, in fact it is almost entirelv digestible and will serve to keep up the vitality of the cow. If you are feeding a ration too rich in protein you are apt to have an expensive ration.

Then, again, certain meals add flavor to the milk; give it a color or flavor that is of value, especially to the man who is selling milk. I might mention oil cake meal, corn meal and barley and oats, these four meals are peculiarly valuable in that respect. They all seem to have the effect of pleasing the palate of the cow, flavoring the milk and giving a good appearance to the milk.

I would like to say a word as to the economy of rations. We have been trying two kinds of feed, we have tried them practically every winter and I might say when you can get oats, peas and bran at normal price, when you don't have to go over $25 a ton for oats, nor over $18 or $20 for bran and you can get peas under $30, I know of no combination that will give better results.

Feeding the Cow. We prepare a mixture of roots and ensilage and then give her a portion of meal right on top and give it a stir with a shovel so as to compel the cow to eat meal and roughage at one and the same time. We give water and salt with the mixture of roots and ensilage as it is prepared on the feeding floor.

Q.—How often do you feed in a day?

A.—Twice in the day; we feed the first thing in the morning ensilage, roots and so on with the meal, then after they are done with that we give them a feed of long hay, and by a feed of long hay I do not mean very much, about four pounds a day, just a little handful in the morning and as much at night. About four o'clock in the afternoon we give them another feed of ensilage, roots and meal and after they have eaten that we give them another feed of long hay. That is the way we feed them and that is what we call twice a day.

Q.—How would oats, wheat and barley in equal portions mixed with bran do?

A.—Do you mean as much bran as you give of the other three together? Yes. That is a very good ration. Wheat, we found, is not as valuable for feed as it is for flour, you cannot make as much money out of it and unless you can buy cheap wheat such as wheat screenings or slightly spoiled wheat at a low price, I would not advise feeding any wheat. We have tried the combination, oats, peas and bran many times in comparison with practically all the foods that have been on the market and we have found nothing that will surpass it. At present prices it is not the cheapest combination. Peas and oats are very dear and we have substituted oil cake meal and gluten meal. These are the two foods that are cheapest this year. Oil cake meal at present prices along with bran, and if you like add a small amount of oats, because there is nothing that seems to tickle the palate like oats, this will give you a meal that if fed in right proportions with oil cake means excellent results.

Q.—How much meal should you give a dairy cow?

A.—If you are selling your milk at from $1 to $1.50 per hundred pounds you would not want to give more than 1 pound of meal for 4 to 5 pounds of milk. Regulate the meal according to the milk produced, but if you are

getting 2c. a pound for your milk then you can afford to give as much as one pound of meal for three pounds of milk produced. I have been experimenting on this, and that is the conclusion to which I have come, you must not give too much meal for low priced milk because that is an expensive way of making money, and in my experience it will not leave the same margin of profit that properly balanced proportions will leave. As to the method of feeding we find it advisable to sprinkle the meal on the roughage after it is put in front of the cows.

Q.—Do you find it pays to feed three times a day?

A.—We do not feed three times a day.

Q.—Have you fed ensilage three times a day?

A.—Yes, we tried that two or three years running, fed three times a day and twice a day and we found they would eat very little more when they had it three times a day, and we found we did not get a pound more milk from ten cows when we were feeding it three times a day than we got when we were feeding twice a day. In fact we found if anything there is a slight advantage in favor of feeding twice a day. We found we saved the labor and after the cow got through eating their morning hay they laid down and were comfortable until it was time to feed them in the afternoon.

Q.—At what time do you feed in the morning?

A.—Our men start to milk at half-past five and they are through a little before seven and then we feed. We do not give them any feed until after milking.

Q.—Have you had any experience in feeding without hay?

A.—The hay seems to agree with the cow and she seems to like it and she seems to give proportionately better results than when she does not get hay. We found it is advisable to give a little bit of hay. The fact that we change to no hay makes the cows a little bit annoyed and anxious and they do not give as good results. If you make any change in the cow's ration she is apt to resent it. We found it best to give a litle bit of hay, but we only give four pounds to each cow, that is only eight hundred pounds to a cow in the winter and it is a very small item.

A Member: I have been feeding hay for a while and it gave very good results.

Professor Grisdale: I think when you get your cows accustomed to it you can get along without hay. This year we fed all our young stock without hay; we are giving them long straw without hay and in place of hay we have given them about one pound of meal.

Q.—How often do you give them salt?

A.—Every meal, we mix salt with the mixture of ensilage, roots and hay.

Q.—How about Alfalfa?

A.—A lot of our hay contains alfalfa, we grow alfalfa all over the farm, in mixture, not pure. Where you have it pure then of course it will very largely take the place of bran or meal. It is rich in protein and cattle like it very well and we find it a most satisfactory feed.

Q.—What about corn that is shocked and is brought in and cut up and fed?

A.—One hundred pounds of it is a good deal more valuable than one hundred pounds of ensilage, but if you set up ten tons of corn in the shock and you have a favorable winter you will probably save six or seven tons of it; whereas if you have a bad winter you will probably get only four or five tons of it and then very often it gets wet in the fall and it will start to mold and there is more or less must in it and cows do not like it. Then

often in winter we get a heavy rain and it freezes right through, and if there is anything that will make a man risk his soul it is hauling frozen corn in the shock. I have been through the experience and I know it is a vexation of spirit from the beginning to end.

Q.—Could not you stack that corn?

A.—I have left it in the field and I have brought it to the barn and built trestles and put it in rows so that the wind would blow between. One winter I put it in the barn, threshed early, and put a layer of straw and then a layer of corn stocks and a layer of straw and I didn't pay much attention to it for a while till one day I went into the barn and noticed a peculiar smell; went on the straw mow and things were warm there, I can tell you. We worked that day and got it out, but I never tried that plan again, I believe it can be done, but you must use a lot of straw. I get the best results by standing it up on top of the hay mow. If you really want results from corn you must have a silo, you can get more value out of an acre of corn in the silo than any other way.

Q.—You advocate a silo every time?

A.—Yes, I know positively it is the only way to do it, I do not believe I would grow corn if I could not put it into a silo.

Q.—Which would you rather feed, corn that is in the stalk or in the silo?

A.—In the silo.

Q.—Is not the corn damaged to a certain extent by putting it in the silo?

A.—It is changed slightly in composition, but it is quite as palatable and it is a great deal more convenient. If you are feeding it from the field, there is only about a week when corn is just right and you can only feed to advantage that one week. After that the cows will not eat it all and you waste a lot, and I think such waste more than makes up for the little of change in the composition.

Q.—What kind of roots do you advocate?

A.—Mangels and sugar beets will give you best returns per ton, we have got better results from a ton of sugar beets than any other roots we have fed.

Q.—Do you think there is any more milk in turnips than in mangels?

A.—I am inclined to think so, we feed turnips right along and we are catering to the best trade in Ottawa.

Q.—Where you grow alfalfa with the hay, will it not get too hard before the hay is ripe?

A.—We do not grow it in timothy; we cut all our clover in June. If we had alfalfa alone, we would cut it from the 15th to the 18th of June.

Q.—What corn do you find best?

A.—Leaming, Longfellow, Compton's Early and Early Mastadon. We try to mix them in the silo.

BREEDING AND REARING CHICKENS.

By W. R. Graham, Manager, Poultry Department, O.A.C., Guelph.

This address was made up largely of descriptions of the stereopticon views presented. The following discussion took place after the address:

Q.—Do you keep the chickens in the corn field every year?

A.—Yes, we generally have a corn field available and we keep the chickens in it because we think it is a good place.

Q.—How do they cultivate in that orchard?

A.—They have a regular disc-plough for that purpose.

Q.—What percentage of zenoleum do you use in the machine?

A.—We use a 10 per cent. solution and we wash the incubator thoroughly inside. The action of the zenoleum probably come from its disinfectant qualities. You should be very careful not to give the little chickens mouldy food. Occasionally you will find little nodules in the lungs of the chickens and that is caused from the mould on the food getting into the lungs and growing there and in many cases the mould is in the egg when it is laid.

Q.—How soon do you feed your chickens after they are hatched?

A.—48 hours. The first meal the chicken gets is new milk fresh from the cow. We aim to take the chickens out of the incubators at the time they are milking at night and we give every chicken some milk. We dip its bill in the milk and a great many of them will drink before they will eat. Every time we go to feed them we drive them out. We spend a little time on them at the start and we try to make them all take a drink of milk.

Q.—How do you use buttermilk in the incubator?

A.—The reason we use buttermilk in the incubator was with the idea of producing a certain gas which we found would grow in the buttermilk, and we put into the buttermilk a culture of bacteria to produce this gas. We use a galvanized iron pan at the bottom of the machine and we fill that full of buttermilk and at the end of a week we put in another lot. If you are using zenoleum in the machine at the same time as buttermilk you will find it makes a very rank smell. We got about as good results last year from zenoleum as we did from zenoleum and buttermilk.

Q.—Do you attribute any beneficial results from buttermilk?

A.—We apparently got some beneficial results from buttermilk. I cannot make any positive statement as to that.

Q.—The buttermilk that you used was infected with bacteria?

A.—The first three experiments the buttermilk was infected with bacteria and the others without bacteria.

Q.—Did you find that putting water in the incubator will affect the moisture?

A.—Yes, I have got better results from every incubator when I used moisture in the machine.

Q.—Do you put the tray in the bottom of the incubator?

A.—We put the tray immediately below the egg tray. We slide the moisture pan on top of a slat that is nailed to the bottom of the machine. It is an inch on each side short of the width of the machine. We get 10 per cent. better results from using water. If you are in a very moist locality you might get as good results without water.

Q.—What do you feed the little chickens on before you start feeding them wheat?

A.—In natural incubation we use nothing but pin head oatmeal, cracked wheat and cracked corn.

Q.—What do you call pin head oatmeal?

A.—Old fashioned oatmeal. We feed them oatmeal, cracked wheat and fine cracked corn. We feed dry at this season of the year. We use hard boiled eggs, bread crumbs and onions during the winter months when there is no grass run. We must make them eat green food right from the commencement, and that is a difficult proposition in the winter time to what it is in the summer. If you find your young chicks want to sit down or get leg weakness in the brooder then you should get them out in the open air. Drive them right out in the open air even if they run right back again. We drive them out twice or three times a day. At the Courtis Duck plant they drive the young ducks out on the snow every day.

Q.—Do you get good results from feeding hard boiled eggs?

A.—We get fairly good results in the winter. We use two hard boiled eggs and a half loaf of bread. We crumble the bread and put in two ordinary sized onions. The onions and the egg are put through a meat chopper and mixed together with the bread and when the chickens get about a week old we take an ordinary bone and put it in the coal stove and get it to glow, all red, then put it into a pail of water and make bone charcoal and we mix that in with the egg. The idea is to supply the chick with sufficient bone material. In the summer time when we get 1,000 little chicks at a time, the egg part goes out of existence, because we have not time to grind them up, and when the grass is green it is not necessary.

WHAT THE RAISING OF MORE SHEEP WOULD MEAN TO EASTERN ONTARIO.

By A. W. Smith, M.P., Maple Lodge.

I have rather a difficult theme to speak upon this morning. The simple fact can be told in a few words, the advantage to the farmers of Eastern Ontario in raising sheep, is that they are more profitable than any other class of stock or any other line of farming which they can undertake. That is about the pith of the whole thing. I can cite to you a few instances in other countries in proof of this. In the Eastern part of Ontario you have not the same quality of land as in the Western part of the Province and I think you would get more advantage from the raising of sheep than any other class of stock and you would have more advantages than we would have in the west. We are a lazy lot of people in the western part of the province or it seems we are rapidly approaching that. Our land there is rich and fertile, especially down in the peninsula; including five or six of the most extreme south-westerly counties of the province. We have changed our system of farming on account of the scarcity of labor, and our land is adapted to the production of very nutritious grasses and we are able to fatten and finish for the export market bullocks of the first-class type. There are a number of places where they finish with grain, where they might probably out-class us but in that particular part a great many farms have been set aside to pasture and there are not many parts of the province that are so well adapted to that. It is a lazy kind of business and a man doesn't make much money but he has no work and not very much worry in connection with it. In the Eastern part of the province you are not able to do that because your farms are not as rich and you have not the same kind of grass that will finish cattle as well as we can in the west and there comes in the advantage of raising sheep in this part of the Province. Sheep are next to the grazing of cattle, the best thing to lessen the labor in connec-

tion with farm work. Of course, I understand thoroughly that in the east you are devoted largely to dairying and that is a very profitable industry. Along with that there is a large amount of work that could be obviated by the raising of sheep. It has been proven in a large number of experimental stations that sheep can be raised per p und more cheaply than any other kind of live stock, and that is certainly an advantage to any person undertaking farming. If you take almost any part of the world where almost any other kind of stock, except goats, will fail to make a profit, then sheep come in and are profitable to those who can handle them. Down in South Africa on the Veldts where they have not nearly enough rain and it is practically a desert they are making profitable sheep ranches. In the Western part of the United States in what they call the dry belt or the great American desert, they tried cattle and the cattle ranches have been deserted, and for a number of years they have been making money out of sheep ranches. Sheep are able to assimulate the different kinds of vegetation they have there. They have a considerable amount of grass growing in the different parts of that district, but the feed is very largely sage brush and the sheep are the only class of animal that will consume that sage brush and turn it into a profit. In the Western part of the Province we have proof that on the best farms we can make sheep more profitable than any other kind of stock. We can get greater returns for the labor necessary and we can have a better and safer outlook for our investment. While the raising of sheep fluctuates the same as other stock we always have two avenues of profit and we have not that in any other class. We have the advantage of the increase in our flock for mutton purposes, and then we have the returns from wool. It has been for a number of years, considerably better than it was a few years ago, and although it has been cheap this year I think the indications are that we will have a considerable raise in the price and that will help greatly. For an average of twenty years on our pasture lands the farmers who have followed it out have proved to their own satisfaction that they can make better returns raising sheep than they can in any other class of stock. But when you come to where the land is not so good and where you have rough land and broken land then the advantage of sheep raising comes in very strikingly and we are able to put them on the land and raise them at greater profit than we can any other class of stock and that is the reason why it would be better for Eastern Ontario to raise a great many more sheep than they do at the present time. Then where we have farms on which we can raise all class of grain, we can increase it more rapidly by raising of sheep than we can by any other class of stock. Up in Yorkshire, England, on the chalk hills where the soil is not much more than the depth of a plow, they are able, by the use of sheep to make it one of the most fertile and productive parts of Great Britain, notwithstanding that the soil is light they are able to produce, on that kind of soil, crops equal to any in Great Britain and there are some very fertile parts down in the South and North, yet in Yorkshire they are able to produce as much as the others and they do it largely from the use of sheep and they have been doing it for a great many years. Their grain crops are equal to those in any part of Great Britain, in fact I believe the wheat average is the largest of any part of England. That is not the class of land you have in Eastern Ontario, but you will get that further North. In Scotland where it is still more rough we find that sheep are the animals that they can make the most profit from and from which they can pay their rent and make a livelihood.

The great incentive in Ontario at the present time to raise sheep, is, that they are more profitable and that they can be raised and handled with a great deal less labor.

The CHAIRMAN: While you have been talking, two ideas have got into my mind and when I get an idea into my mind, I like to sew a button on it for fear I would not find another. There two things which are of the utmost importance to the sheep breeders of Eastern Ontario. One of them which has perhaps discouraged the industry more than any other is, the question of dogs killing sheep and the other question is how many sheep would be profitable to keep upon an ordinary 100 acre farm.

Mr. SMITH: With regard to the first question, undoubtedly the sheep men of the province are entitled to protection from dogs. There are undoubtedly a great number of people who give as a reason for not keeping sheep that they are afraid of the destruction of their flocks by dogs. I have been on a sheep farm ever since I was able to understand anything in connection with sheep and I have always been very much interested in them and I have taken a great deal of pleasure in working among them and handling them. We live in a section of the country where there are a large number of dogs kept and yet we have never had dogs attack any of our flock. Some people have said to me, you have been very fortunate. There is reason for that good fortune. We have found it profitable to enclose all our sheep at night in pastures or corrals or yards that are dog proof. We have fences around the field they are in, that the dogs cannot easily get through. I have an interest in a little ranch out in Alberta, where we keep a considerable number of sheep, and although it is quite close to an Indian Reserve where they keep a great many dogs and although there are a great number of coyotes, I solved our problem in the same way there, and although we have to have a shepherd look after the sheep; every night, they are brought into the enclosure. It is fenced with pretty close woven wire and since we have been using that we have had no source of loss at all from coyotes or dogs at night. I am quite certain we are entitled to better legislation for our protection. Some means should be taken by which the number of dogs could be lessened in this country.

Q.—How many sheep should be kept on a 100 acre farm?

A.—That is a point on which I haven't any hesitancy in speaking. I think it would be very undesirable for any person, until they are thoroughly posted on raising sheep, to adapt your whole farm to that purpose. I think in Ontario it is a mistake to devote the whole farm to any particular line. I think a flock on a one hundred acre farm should be from twenty to twenty-five, and I think that is the limit of profit where you are going into mixed farming. I think that you will find that number will be more profitable on a hundred acre farm. Any person who is interested in sheep raising should get the bulletin issued by the Dominion Department of Agriculture, treating on that industry, and one of the very best I have seen published in any country.

ECONOMICAL FEEDING OF BACON HOGS.

By J. H. GRISDALE, AGRICULTURIST, CENTRAL EXPERIMENTAL FARM, OTTAWA.

I am asked to speak on the Economical Feeding of Swine. I will not give you the details of any experiments we have been carrying on lately, excepting as they bear on the economical feeding of swine. In a general way, a man who wants to produce bacon economically must start at the very beginning. He must start right from the moment he buys or breeds his brood sow, because everything you do in pig breeding makes for profit or loss on your finished product. If you buy a sow, keep her a year, and she then gives you five pigs and has cost you $20 keep for that year, your little

pigs have cost you $4 a piece, but if at the end of the year she has cost $20 keep, and has given you ten pigs, there is a reduction of $2 a pig right straight. Thus you see you cannot be too careful in starting if you are going to go into the bacon industry. You must start with the right kind of sow and one of the principal considerations in selecting a sow is her prolificacy, see that she comes from a strain that gives large litters. Then again get easy feeding pigs that are unthrifty are almost impossible as a means by which to make money; we must have good thrifty pigs, and this again is often a matter of strain. Next we want pigs of the right type. Getting unthrifty pigs means two or three per cent. difference in the profit or loss, getting pigs of the right type means a gain or two or three per cent., getting pigs of the right strain for prolificacy means a gain of ten or fifteen per cent., or in all twenty per cent. on your profit or loss. The importance of starting right seems therefore to mean about one-fifth of the whole thing. In selecting a sow from among your own herd or elsewhere, care must be taken to see that she is likely to be prolific. She should come from a large family, and she should be marked in such a way as to indicate that she will give large litters and she should be from a healthy vigorous strain since these points decide ultimately whether you are going to make a profit or loss. If you have one that will cost you $15 to feed for the year, she will likely make more profit for you than one that costs $20. Then brood sows must be fed cheaply. You do not want your sow to be kept ready for the block right through the breeding season. She should be kept in a good vigorous healthy condition, with just enough flesh to make her feel comfortable.

Let me draw your attention to an experiment we carried on at the Farm last winter, that gave us must satisfactory results: it was a gathering together of all we had learned in past years. We took 29 brod sows. turned them out in the field, gave them some cabins in which to sleep, and fed them as follows:—During the months of December and January we gave them all the clover hay they would eat, about 12 lbs. roots, and about a pound of bran a day. For the latter part of January and all February they got from two to three pounds of meal instead of 1 lb. in addition to the supply of roots and clover hay. These pigs during the first period of the feeding operations cost us two and three quarters cents a day to feed, and during the latter part cost us five cents a day, so that they cost us an average of about four cents a day right through the time they were carrying their young or somewhere around $4.50 or $5 for the winter till they farrowed. To this add a couple of dollars for feed while they were nursing their young. Thus each litter cost us $7 or $8 at weaning time. They gave us as large, thrifty and healthy litters as we ever had.

This experiment is being repeated and at the present moment we have fifty sows eating hay like horses and cows and being fed roots. At present they are getting about two and one half or three pounds meal per sow per day. Sows that are going to farrow first are getting the heavier meal ration. Last year when a number of men from the Western Provinces came down and saw our sows they made fun of them, but when I went west and saw their litters, I had a chance to condole with them. Our experience now extending over several years seems to show that the above is the best way to feed sows in order to get the very best results in the way of healthy, vigorous and large litters. They do well afterwards; we did not have one bad pig come last spring.

Q.—What about ensilage for feeding sows?

A.—I have tried ensilage but I do not like it very well, they do not eat the coarse part of the ensilage very well, and they waste a good deal

but if you feed them clover hay, they do not waste anything at all. I would rather give ensilage to the cattle and roots to the pigs.

Q.—Do you feed the clover hay whole or cut?

A.—Whole, we have racks something like sheep racks and they stand around them like a lot of sheep.

It is important to feed the little ones so that they will keep right on growing and in good health as long as they are with the mother. That, of course, depends on the way you feed the sow, she should always receive rather laxative food, rich in protein but not in too large quantities. You want to be careful that it is very wholesome food, because there is no animal that seems to transmit any peculiarity of the food so quickly and readily to the young which are living upon her milk as does the sow. If you give the sow some laxative food, first thing you know the little ones are affected. Keep her right and the little ones are likely to be right. In a short time it pays to give them a little feed in addition to the milk they are getting from the mother, especially in the case of large litters. They should have something in the way of skim milk or a mixture of shorts or oil cake meal and finely ground oats. There is nothing quite comes up to skim milk as a cheap, highly valuable feed. If, however, you can start them off with whole milk, it is better still only you must be careful not to feed it too rich. Keep the little ones with the sow until seven or eight weeks old. That looks like a hard strain on the sow but it will be to the advantage of the little ones. This is the best practice for the economical production of bacon. During the growing period we want to keep them in vigorous condition; we want them to have a good strong frame and lots of well developed muscle, that is the time when they are getting ready to do the finishing off act cheaply. To begin to fatten right after weaning is to get short thick fats.

The period from the time they are 2½ months until four or five months old is not generally speaking a very profitable or cheap feeding time, you can feed them cheaply but they do not make very great gains in weight. You must however, feed them that way or later on they won't make cheap gains of the right kind of meat. After they have reached the age of 4½ months, feed them heavily for a month and a half, they will make remarkable gains if they have been fed in the right way after weaning. A little bit of skim milk, or a little bit of finely ground oats or shorts, and some pasture if it is in the summer, or roots in winter, is the way to feed after weaning. Keep them growing on that, and then the last period feed them for all you are worth.

I have tried about every mixture I have ever heard of, or could prepare myself, and I will say that we have got the very best results from the simplest rations with this modification that we very seldom find one single grain or even two mixed that will do as well as a mixture of several kinds of meal. Where one has some barley he wants to feed his pigs, he had better sell off a few bushels of the barley and buy a few other things and mix with it, and the same applies to other grains or feeds. We find a mixture always does very much better than one grain, and a mixture of three or four grains will do better than one or two. These three, oats, peas and barley, fed in about equal proportions will give good results, and if you have no roots an addition of a little bit of oil cake meal will very largely take their place. If you have no roots of any kind or potatoes, then add to 100 pounds of each of these others 50 pounds of oil cake meal, making a mixture on which your pigs will thrive.

To show how cheaply gains may sometimes be made, let me give you two or three experiments we conducted last winter. Prices for mill feeds and

grain have been very high. We took them at market prices and I found that when we were feeding the ration I have described, and feeding along with it an equal weight of roots or potatoes or skim milk, any one of them or all combined, we were able to produce pork for 4½ cents per pound live weight, from the time they were weaned until on the block. We produced a two hundred pound pig for less than $9 and we have never got less than $10 for that pig. We did not of course produce all our pork as cheaply as that.

Among other experiments we fed frozen wheat last winter, and it cost us quite a bit more to produce 100 pounds pork live weight. In one case where the pigs were just in the finishing period, however, we were able to produce pork during seven weeks just as cheaply with frozen wheat as with any of the mixtures but we never did it before nor since.

Q.—Are the roots cooked or raw?

A.—We have found that roots will do well either way. If you are feeding mangles I will say it is just as well to feed them raw, giving them whole or pulped. We have fed our sows both ways and I do not see much difference. For feeding young pigs, however, I am not prepared to speak positively. We are working on that at the present time, feeding about thirty pigs and comparing roots pulped and cooked. Our past experiments seem to show something in favour of cooking roots, but then we do not calculate the cost of cooking. I am afraid if we took into consideration the expense of cooking it would not pay.

Q.—Do you feed meal wet or dry?

A.—We feed our meal wet. Where you have a large feeding floor that you can keep clean, and off which the pigs are not likely to run, then I would say feed dry. They do better on dry meal than on wet meal, but you must have a large feeding floor, or else they will run off it and waste the meal. Where we feed dry meal we try to prepare for it, making a platform so that the pigs can run up and grab a mouthful and then back away and chew it. Even then you will find that there is more or less loss, but if you have a good big platform, they will clean it up fairly well. You must in addition have a special trough to keep the water in. I think, therefore, it pays better to feed the meal mixed fairly thick rather than dry.

Another feed we have found profitable is small potatoes. You will always have some potatoes that are not fit to sell, and the best use you can make of them is to cook them and mix with them a little bit of meal. The same with pumpkins; cooked pumpkins mixed with meal have given us very large and cheap gains. In estimating the cost of these gains we charge small potatoes and roots at $2 a ton. We find the average cost of producing roots is $2 a ton.

Q.—Can you account for the falling off in our bacon trade in the old country?

A.—I think it is very easily explained. When you have to pay an increased price for meals ranging from 20 to 50 per cent., and the price of bacon is not a bit higher, the explanation is a very simple one to me. We have been feeding for several years from 200 to 400 pigs every year on the Experimental Farm, and it has kept us all our time to pay for the labor and feed this last year or two. Last year, 1908, from January 1st to December 31st, we made a few hundred dollars, but not very much, and we made it on the pigs that we fed in the right way. Pigs fed as the average farmer feeds them, do not make so much money, in fact many pigs that we sold for $10 cost us $11.

Q.—Do you feed corn at all?

A.—We have some rations including corn. It is capital feed, but very high priced at the present time. We have also fed gluten.

SYSTEM IN HORSE BREEDING.

By John Gardhouse, Highfield.

To my mind system in the breeding of horses in Canada has not been followed out along any particular line. While some men have made a success of horse breeding and have worked along certain lines and have had a very good system, generally speaking a good system has not been adopted by many of the breeders in this country.

When out on the Horse Commission a couple of years ago during the whole trip I cannot say that I saw any person who had what I would consider a really first class system in horse breeding. Now that is not as things ought to be. It is not good for the horse industry of the country. It is necessary that in the matter of horse breeding, as well as in any other line of business, that you should adopt a good system. While out with that commission we tried as far as possible to find out just what systems were being followed in the different localities. In many cases we found that if a pretty good fellow would come along with a fair horse and in some instances a very inferior horse, many a farmer would breed his mare to that horse regardless of whether he was a suitable horse for that mare or not especially if the fee was made low enough. Very often the average farmer would breed from a heavy horse one year and then thinking he could get a horse that would be more suitable for his work on the farm by breeding to a Hackney horse, carriage horse or thoroughbred horse he would breed in that way the following year; there was no system, and he appeared to have no ideal before him. In breedng horses there should be a definite aim. I remember one man telling me he had a pair of good Clydesdale mares, something that nearly every farmer in this country ought to have, and he told me his father advised him to breed these Clydesdale mares to a carriage horse because he said if you do you will get a typical pair of farm horses, a pair that will do you good service on the farm. I do not think it is a hard matter to get horses to do your work on the farm. You can do the larger part of your work on the farm with your brood mares and colts as they are growing up to the age when they will be marketable. So that the man who is aiming to breed a pair of horses to do his work on his farm is making a great big mistake because the average farmer cannot keep too many horses on the farm, and he should largely confine himself to doing his work with his brood mares and his colts. No man can make a success of any line of business whether breeding horses, cattle, sheep or swine, unless he has got some kind of a system. That is always important, and in order to get that system, one of the first things he should have in his mind is an ideal, something to aim at. That is important, you will find any man desiring to reach a high standard will have an ideal before him and he is is aiming to reach that ideal. Any person who has not got an ideal of his own is not going to accomplish that which he should. It matters not what line of business you are following, having set your ideal, let that be a heavy horse, or a light horse—and I am not here to advocate any breed of horses because we have quite a good demand for all breeds of horses if they are the right type of the breed to which they belong. But while I am not here to advocate any breed, I am compelled to say this, that, for the average farmer, I think you had better stay with the heavier breeds because you must, to a large extent do your work with your brood mares and young horses and if you are doing your work on the farm with these mares, the heavy horses will be more suitable. A light horse requires more time and experience to breed and raise in order to get out of it all that is in it. If you

breed a good light horse you are liable to let it slide out of your hands before you know just what is in that horse; therefore I say for the average farmer the heavier horse is the more suitable one to breed. With your ideal in view be sure that you get the right type of havy horse to bred from. Get a horse with a fair amount of size and quality combined. There are some of our breeders who lose sight of quality in order to get size, and others sacrifice size in order to secure quality; but in order to attain the best results, it is necessary to have a fair amount of both. I like to select a horse with a good broad forehead, a bright clear eye, a nicely set ear, broad open jaws set well apart, and not a meaty but a clean cut throat, neck well arched, and blended well into the shoulders, a good depth from bottom of neck to bottom of chest, forelegs well set back under the body and well muscled, chest prominent, broad knee, hard flinty bone, nice silky hair, moderately long sloping pastern, good feet, withers well carried back, good spring of rib, strong back, nicely turned quarters well muscled down, clean, broad, strong hock; a good walker picking up every foot squarely and setting it down squarely. There is no farmer who can afford to breed horses unless he has a reasonably good mare to breed from. You may say "It is all very well for you to say that, but we have not got the means, we cannot afford to put the money into those high priced registered mares to breed from." In my opinion you cannot afford to breed from the light or poor mares that some of the farmers in this Dominion are breeding from at the present time. You can afford to sell some mare or horse you have on the farm that is not very good and add a little money to the price received and get a good mare with some breeding. I do not say you have got to pay big money for a mare that could probably come here and win, or go to Toronto and win; it is not necessary to do that, but get a good type of mare, then select a sire that will be suitable to bred that mare to. First see that you have a mare that is a good type of the breed to which she belongs, and a mare that has got a good constitution and a fairly good pedigree, because if there is anything wrong in the breeding it is something that will probably trace back two or three or four crosses, and you will find the men that have made the greatest success in breeding live stock of any kind are just as anxious that they shall have a good pedigree as they are anxious that they shall have good individuality. The two must go together in order to be sure that you are going to have something that will give you good returns for the money invested.

The number of mares the average farmer could breed will depend largely upon the amount of land he has, and the other kinds of business which he is engaged in. To my mind a farmer on a 100 acre farm could very well afford to keep one pair of brood mares, and that pair of brood mares need not cost him more than $400 or $450, and he can have a pair of mares that will practically do all the work on the farm, with another team to do the road work, and with the help of a colt or two he is fixed as far as horse labor on the farm is concerned. He should have no trouble in raising three colts in two years from these mares. You have double profit in the horse business because you can do considerable work with your mares, as well as raise the colts. If you are in the dairy business you have got to get all the profit out of the cow, in our part of the country we prefer the horse business, I think it is easier and much nicer work, and the more you study it out and think about it, and the more attention you pay to the little details, the more you will like it, and if we had our average farmer throughout the Province with an ideal, following out a certain system, and knowing just exactly what he is aiming to get, you would find that the horse business in this country would increase by one third. Just think what the revenue of

this country would be compared with what it is if the horses were worth one-third more than what they are on the average farm. They should be worth that, there is no doubt about it.

You should thoroughly understand every point in your mare and where she lacks, then go and select a horse that is strong in those points. You will not get any horse perfect, and you will have to balance up in order to get the best results. Do not listen to the man that has got the horse; beyond a reasonable distance. If you are not competent to judge horses, it would be well to talk it over with some man who might be a good judge, some man who is not particularly interested in the stallion business. Get his opinion because you know stallion men are like other men, they are not going to tell you their horse would not be suitable, I will guarantee there is no stallion man here who would do that. I would not do it myself, if a man comes to another man who has got a stallion he is going to take the mare, but you should be sure that you know your mare from one end to the other, that you get a horse strong in the points where the mare is weak, be sure they have good hock action and knee action. Be sure they are good walkers. If you will follow that system that is practically all you need to follow. Just get a good mare, a good type of the breed to which she belongs, as near perfection as you can get her, then go over her particularly, as I have said, know everything about her, and then select the very best sire possible. Not only a good individual but one that is properly bred and one that is in a good man's hands, so that you will be likely to get a colt, because there are some men going about the country with horses that know very little about handling them.

Q.—Do you advocate breeding to the rangey stallion or the blocky stallion?

A.—That largely depends, as I have said before on your mare.

Q.—What does the market demand?

A.—I think the market demands a medium between the two. I do not know exactly what you may mean by Blocky Stallion or Rangey Stallion. The market demands a horse that will stand up pretty well, and harness up well with nice rangey appearance, not long legged, but still not a low down plug; the medium between the two would be about what the market demands.

Q.—What about the disposition of the mare and horse?

A.—The disposition is a very important thing. I have said and I am not at all afraid to say it here that a horse is a very intelligent animal. I have seen horses driven by men which I thought knew more than the men who were driving them. There is no reason why a horse cannot be taught pretty nearly anything, if he is taken in the right time, just as boys can be taught in school, so can horses be taught if they have the right men to teach them. It is important to try and look for intelligence.

Q.—Would you like to see restriction put on stallion owners limiting the number of mares. We get a lot of good mares as a rule. The sires are not limited to a certain number, and there is nothing to protect a man with a good mare whatever, and as a consequence he looses the mare.

A.—Do I understand from you that some of the stallion owners do not insure, and have come around with horses probably not very sure and travel by the season, and collect certain fees? That is not done with us. I know of no stallion owner with us that does not insure. If a man is travelling a horse for the season, then I say to the farmers be careful what you breed to.

Q.—How do you contend insuring will protect the farmer?

A.—Because you do not have to pay unless you get a colt.

Q.—You would lose the use of the mare for the year?

A.—To my mind it would be difficult to pass any act that would compell a stallion owner to guarantee that his horse would get a certain percentage of colts.

Q.—Are thoroughpins very objectionable in the stallion?

A.—A really bad Thoroughpin is not a good thing, but you will often get thickness in the hock which might be considered by some people to be a Thoroughpin, and they are possibly not.

FEEDING HORSES.

By John Bright, Myrtle, Ont.

The subject that I have been asked to speak upon for a short time this afternoon is Feeding Horses. It is a question akin to the horse business in this country. It is of as much importance as anything else connected with the business. We have often heard the old adage "feeding is half the breeding," and in order to get the best results out of the horse either for working or in breeding lines it is very important to understand how to feed them. There is no animal that will do better on the natural grass with the natural atmosphere and natural exercise and knowing that the nearer we get to these conditions the better results we will have from the feeding of horses.

In feeding horses on the natural grass in the summer season, they do not particularly need grain as long as they have the run of a field of good pasture, although they will do better with a little grain added. Some of us consider we have good pasture farms and we think they are not adapted to grain growing but the man who thinks he has a good pasture farm that is not a good grain farm is mistaken. Quality has got to be in the feed to give the best results, consequently the natural grass on good dry land that will produce grain is best.

When a horse is in pasture he has pure air and that is something we should try to get in the stable. For seven months in the year, we have to stable our horses and we should try to get conditions of air and ventilation as near the summer conditions as possible. The question of ventilation is something that has had too little attention from the farmers throughout the Province of Ontario. Stock of all kinds must have pure air, all must have well ventilated stables if they are going to make the best of the feed you are going to give them. We find in many stables throughout the country where the horses received the best kind of feed that they are not doing as well as they should and if more attention was paid to ventilation this state of affairs would not exist.

Exercise is absolutely necessary to a horse. You have to feed a horse so much to sustain life. You have to give them a certain amount of food to keep them just where you started with them and then the little extra feed that you give them means the profit. If you do not do this you lose the result of all the feed the animal has received, while the little extra feed you give them means the profit on the horse.

In order that a horse should develop properly he must have exercise and I think one of the greatest causes of the Scotchmen having better legged horses than we have is the fact that they are running out the year

round and get more exercise than our horses do. If you feed horses as you should and do not give them exercise, you will be troubled with disease; there is not as much danger of over-feeding if you give them exercise as there is if you neglect it. Breeding mares require exercise. They should be hitched up and made to do the light work on the farm. There is no danger in working mares regularly, right up to the time of foaling. I have had as good a foal as ever I owned when I had to unhitch the mare from the plow and did not have time to get her to the stable. If a mare is fat and flabby, you will get a fat and flabby colt. If your mare is in good working condition with good hard flesh, you will find the colt will be the same. My observation has been that the man who gives his mare the proper exercise and a fair amount of feed will lose a very small percentage of colts. Joint ill has been the cause of much loss but it is very easily prevented by the old cure of using antiseptic from the time the colt is dropped till the navel heals. I lost all my colts for two years, away back in 1894, lost some 8 or 9 from joint disease before I started to try that remedy, and from the day I started to do so, I have never lost any and I have raised dozens of them. Last year I lost a colt. It was on a farm a little piece from mine and the man there was treating it and it got to be about 10 or 11 days old when we brought the mare up to my place and the colt took lock-jaw the very night it came up. It was a very valuable colt. I asked the foreman if he had used the antiseptic and he said "Yes, once a day," and I said "If you had used it three times a day, the colt would be living now." There is no use trying to do anything unless you do it thoroughly and there is no need of losing foals to-day if you feed properly, give plenty of exercise and treat the colt at the navel from the time it is dropped until healed.

We believe it is a very good thing to put grade stallions off the road as soon as possible and to get rid of the unsound ones. You had better not get your mare in foal than get her in foal to an unsound horse. Some men think they are in luck when they breed to a horse that cost $5.00. They would not think so if they realized that they get a colt that will never make them five cents profit.

Q.—What antiseptic did you use for joint ill?

A.—Use dilute carbolic acid, zenoleum or any antiseptic in the world as long as it is used thoroughly. It should be applied at least three times a day.

Q.—Should it be used immediately after birth?

A.—Immediately after, and until the naval is thoroughly healed.

Q.—What length would you cut the cord?

A.—I do not believe in cutting it at all, it is very rare that you have got to do it, I would sooner have it break off.

Q.—If it starts to bleed?

A.—If it breaks off, I never knew one to bled much.

Q.—Supposing you had to cut, what length would you cut?

A.—It should be left about two inches long.

Q.—Do you tie it?

A.—Tie close to the body.

Q.—What do you tie it with?

A.—A string that is disinfected.

Q.—If you are going to have a long drive, would you feed heavily before doing so?

A.—I say no, many mistakes have been made in that way. If you know a horse has a long distance to go, and you give him an extra feed, his system has got to contend with that sudden change of feed on the stomach, and it very often means a sick horse before you arrive home.

Q.—Would you fed a horse the same grain ration after they quit work, that you were feeding before?

A.—When you quit work in the fall and you know that you have not got much more to do, the feed should be cut down materially especially with the grain.

If they are work horses that you want to keep over for spring work, you should just try to keep them in good flesh. You should just feed them the required amount to keep them in their present condition, but they must have exercise, or they won't be healthy. A horse should have salt daily, we have practiced putting salt on their feed. I do not believe you can get a better condiment than salt, and if a horse has exercise I do not believe there is any danger in feeding a few oats if you add a little salt.

Q.—Is that the case with cattle?

A.—Yes, salt is a good thing for cattle and all live stock. A teaspoonful on the food would not hurt a horse but I think it is enough.

Q.—How much hay should a horse have with a gallon of oats?

A.—I have never weighed the hay so as to know exactly what the horse should get, but I believe in the experiments that have been tried in the colleges that one pound of hay per day for every hundred pounds the animal weighs is sufficient, although I believe heavier horses will require a few pounds more.

HOW TO SELECT A HEAVY DRAUGHT STALLION, AND UNSOUNDNESS MOST FREQUENTLY FOUND IN STALLIONS.

By Wm. Smith, Columbus.

When I received a letter asking me if I would say a few words upon this subject, the question arose to my mind,—Is there any need of talking upon a subject of this kind? I had to answer it in two ways. No and yes.

A number of men show a good deal of common sense and wisdom in selecting a stallion and others show the very reverse. I may say to you that in a great many ways I agree with every word Mr. Gardhouse has said to you. Your ideals must be of the highest, and in selecting a stallion I think it should be of the highest type, and you cannot have too good an animal. Another point I would urge upon your consideration is that he must be better than the mares, if you want to accomplish the very best results. In making the selection most men would probably have to consult their pockets in order to see how much they can afford to pay, and you will also have to consider your own personal tastes and your friends' and the people who live in your neighborhood, in order to know how many customers you will have. You must also consider how liberal they will be in paying. You may not think this of much importance, but if you want to get dividends out of the money invested you will find that this is of a great deal of importance.

In selecting a horse there are several things to be taken into consideration. He should have a good temper, you cannot put too much consideration on that point. I would like to have his underpinnings the very best. It is possible the horse might be required in a section of the country where the mares were of a general purpose character and then I think I would the mares were of a general purpose character and then I think it will be possible that you might have one a little rougher. Perhaps not with as much quality, but if it is in a section of the country where the mares are more improved then I think you should get away from that roughness and

have as much quality as possible and that is true of the very best sections of this Province where heavy horses hold sway. The under pinning should be of the very best and when I speak of the under pinning I include the feet, pasterns and the leg generally, both before and behind, and of all things, keep away from meaty legs. Let them be as fine character and have as much quality as possible, and when I speak of a little roughness I would like to caution you against having it of a rough, hard kind.

The general conformation must be very much considered, because you will readily understand that horses with a good appearance are always more attractive than one that is not good looking. A stallion that has a fine appearance attracts attention equally as much as a fine looking lady. The middle of a horse, the length of rib should count for a good deal. A horse should always be able to carry a good hearty meal. I would select a horse that is a good walker because the heavy horses often end up in our cities, and if he is a good walker it counts for a good deal. His action also counts for something, not that he must be a trotter, but his action should be square and his hocks should come in together.

The neck should be of a fair length and I will tell you my reason for that, when a dray horse goes from the farm into the city he usually wears a heavy collar and if the animal's neck is too short he looks badly and you will find that our principal buyers are prepared to pay a little more for a horse that will show some length of neck outside the collar than a short one. If you follow somewhat on these lines you are fairly sure to be successful. The fact that certain stallions are not sure is one of the things that is troubling the farmers to-day almost as much as the owners and it is very difficult to arrive at any conclusion in that regard; it may be that the feed has caused that and it may be caused by want of intelligence on the part of the groom, and my experience is that from one end of the year to another a stallion should be fed wholesome and fairly nutritious feed; and that from one end of the year to the other it should have a fair amount of exercise, and I think exercise will generally be taken by a stallion if his yard is large enough.

If the owner, who has invested his money, and the farmer who is reaping a portion of the profits, pay attention to these points there will be no necessity for Mr. Gardhouse or myself to say that there has not always been, in this Province, a wise selection of horses.

You may say, "Will pedigree count for everything in an animal?" I do not think it will. Along with pedigree you want to have an animal of the ideal nature that I have spoken of this afternoon. Pedigree should count for something—breeding along the same lines for a number of years. There can be no question that when an animal is brought into this country it will play its part, therefore I would say by no means neglect the pedigree. Darnley, Prince of Wales, and animals of that character have played their part, and to-day Baron's Pride and Hiawatha are playing theirs, and you will make no mistake if, in selecting your stallion, you pay attention to pedigree.

There is just one other point I would like to mention and that is unsoundness, and this is often found in draught stallions; ringbone and spavin. I would not go too far on a bog-spavin, because, as you have been told this afternoon, a stallion which has been fed year after year havily and carrying a great amount of weight might possibly go a little wrong there; but if it is bone spavin, look out for that and I would say, be very careful in using that horse.

Q.—What about side bones?

A.—I do not know that I would like to throw down a good horse for a side-bone which was not likely to be troublesome. I know I am on somewhat dangerous ground in saying that, but from what I know of a number of stallions that were that way, I have come to that conclusion. Of course it is better not to have them.

I would rather not have a thoroughpin. I do not say it is hereditary, but I would rather not have it. Then there are the "roars," which might be brought about by inflammation or pneumonia. It is often not very troublesome. I do not think it is hereditary. It does not hurt a horse a great deal, but it decreases its commercial value.

Some of our heavy stallions have not good feet and if you get a small footed stallion I would not care to select it, I would rather have one with a good strong foot in every way. Another trouble is "string halt," and I do not think there is a man living to-day who knows what causes it. I was informed this afternoon by one of our most prominent veterinarians that the man does not live who can tell what brings that about; but there are too many stallions with that trouble.

Then there is the curb. That is an abominable thing, because everybody can see it, and it will often make a horse lame. There is a very strong feeling amongst horsemen that the larger a stallion is, the better. I am led to this conclusion that when they are over-grown or what you would call freaks, they are very uncertain.

If you will put on your thinking caps for a moment and look over the stallions throughout the country where you reside, you will arrive at this conclusion that, the moderate sized stallion of fairly good quality is the one that has left the greatest impression upon the horses in that section of the country. I think it is most important.

Q.—How do you exercise your stallions?

A.—We have paddocks of about an acre in size and we turn them out there one at a time.

Q.—Do you object to them being driven?

A.—No, I think if more of them were worked it would be better.

"HOW TO MAKE THE ROUGH FEEDING STUFF MORE PALATABLE."

By Robert Miller, Stouffville.

It pleases me very much to have an opportunity to speak to the people of Eastern Ontario on the subject of feeding cattle, and how to make the rough feeding stuff more palatable. That question is to be answered by me in this way.

First.—You must begin very early in the season. You must begin when you are cutting your hay and you must cut it early enough, you should make up your mind that you are doing one of the important duties that is required of the farmer, each and every year. If your hay is exposed to a rough, harsh rain, left in an unprotected manner, it will lose in one night half of its value, therefore you should be sure to cut hay at the proper time. Cut it before most people think it is ready, because then it is in proper condition to make good palatable food for your animals.

It is also important to cure your hay and preserve it in proper form. It has been said in this room that it was necesasry that each and every

animal should have enough of every kind of food. It does not pay to fill an animal up with a concentrated food. You can place that food on the market and get good cash for it. Your animals should be filled up with rougher foods produced on the farm. Straw is the cheapest and the most valuable of the foods that you grow. I believe there is not one farmer out of every hundred, even of the intelligent farmers, of Ontario that attaches one-half the value they should to straw. You should take better care of it and feed more of it to your animals.

A lesson I have learned from successful farmers in my own neighborhood has taught me to believe thoroughly that working horses of the heavy class should not receive one mouthful of hay when you have reasonably good straw to feed to them, during the whole time they are not working hard; in the winter season. I have tried that myself and have worked perhaps as many horses and as severely during the summer season, as any farmer in this room. I have sixteen horses working on one farm and I can tell you that we are making a deep study of how to get the most work out of them. These horses never get one mouthful of hay in the winter season, but they get good straw and from the time we cut our oats and barley and wheat I feel more worried to know whether we are going to get that straw into the barn without a rain than I am worried about the curing and saving my crop of hay. I believe it is of more importance to me. Good straw is more easily digested and a more healthful thing to feed your horses and cattle, than hay. I do not want you to think that hay is not valuable when your horses are working.

They do not feed hay to horses in the Old Country; you can go from one end of Scotland to another and you will see stacks of hay, if you ask them what they are going to do with it they will not tell you they are feeding it to their work horses; they feed them oat, wheat and barley straw. Ask them what they grow it for and they will tell you they feed a little to their hunting horses and some to their driving horses, but they would consider it the next thing to poison to feed it to their heavy horses when they are not working hard; they would rather give them more corn—as they call oats—and less rough feed. I believe if you would copy from them and be more careful to save your straw by shocking your sheaves, and making a determined effort each year to put the straw in the barn without letting it be exposed to the rain, we would be making the best use of our feeds that could possibly be made by the farmers of our country at this time.

These same remarks apply to the cattle to a greater extent. The question of feeding horses is a different one. You must have them so that they can work. Your cattle do not get a great deal of exercise, and if you can make straw, and the rougher classes of hay more palatable so that they will fill themselves and lie down comfortably each and every night, it should be a great source of satisfaction to any man that takes the proper view of the position in which he is placed as a farmer in this country. There is nothing that gives me more comfort or tends more to make me go to bed at night satisfied than the thought that each and every one of the animals placed under my care have had just as much to eat as they would care for. I do not want them to be satisfied altogether with grain, that is not necessary, and it would not be profitable, it would be very unprofitable from a great many standpoints, but I do want them to have a good amount of palatable feed so that they can lie down and chew their cud through the night and be satisfied until they are fed again in the morning.

Corn stalks, either dry or converted into ensilage, is another very important addition to the rougher foods for cattle. I have a silo and I have filled it every year since I had it until this year. This year I had not very many

cattle and I cut the corn when it was beginning to glaze, just about in the condition we would like to have it for the silo, and I had it shocked up very carefully. I tied the tops of the shocks into a small point, so that should it rain the corn would not get very wet and I have a splendid supply of feed, and my cows, sheep, and horses are glad to eat it. They thoroughly relish it and I believe it makes a splendid food for cattle, horses and sheep if properly mixed and fed to them, so that they will want to eat it up clean. I grind roots and mix them with cut corn and they stand mixed in that way for 12 hours. I take my corn inside. If you leave it outside you will have trouble. I know that some years it is difficult to get your corn dry enough to get it inside. It is most important to get your corn housed as soon as it freezes. It will pay you to go to some trouble to mix up your rough foods and see that they are palatable for your animals.

I believe if a man has some rough feed, such as straw that is not very good, or hay that is not very good, he ought to feed that in the early part of the season. Keep your sweet straw and hay to be fed in the latter part of the year. Corn stalks will not be relished by your cattle in the spring. Feed the refuse feeds that you have on your farms early in the winter when they will eat almost anything. That good brisk temperature that we are lucky enough to have in this country of ours will make these feeds good and they will nourish the animals well and make them thrive. In the spring of the year your animals are more dainty and want to have a little better and sweeter food.

Q.—How about feeding the cattle outside?

A.—I believe it is good for an animal to get the sunshine and a change of temperature every day. An animal that is kept outside all the time will never have tuberculosis, and an animal that is kept inside all the time will in the majority of cases get tuberculosis if the ventilation is not of the most up-to-date kind. You do not want the animals to be too warm. I do not believe in these basement walls that so many of us went to a great deal of trouble and expense to get, a number of years ago. You do not find the people putting up that sort of a building now. I believe in having the best ventilation you can get, but do not keep your animals too warm. We have tried that time after time.

I hope these few remarks I have made will have the effect of making you think a little more and that in that way, they will be of benefit to you.

Q.—Do you cut the hay for the horses?

A.—No, not unless we have hay that is not very good. If you are going to dampen the hay you should cut it and mix it with straw before you feed it to your horse. I do not think a man should feed extra hay to a horse unless he cuts it, dampens it and mixes it with straw.

Q.—Do you feed roots to your horse?

A.—Yes, I like to feed turnips. I do not think there is any thing much better for them.

Q.—Do you approve of watering the stock in the stable?

A.—Not as a rule, I like them to walk outside and take a drink. I have scarcely ever gone into a stable where water was continually standing in front of the cattle, but what that water was dirty, and I do not think it is a good thing, and then the animals don't get exercise. If it comes disagreeable weather we don't turn them out, but I think they should be turned out in the air and get cooled off twice a day, weather permitting. I do not believe in letting fat cattle run out too long, but I don't believe there is anything objectionable in turning them out for a short time each day. I do not believe in tying cattle up. You can feed a lot together in a big run and they will get considerable exercise.

Q.—Do you believe that feeding corn stalks dry is nearly as good as ensilage, and how do you keep the mice out?

A.—I put the corn in the barn in the fall of the year and I never have any trouble with mice. Well cured corn is as valuable as any feed we have

Q.—If you put sulphur on your corn it will keep the mice away. Don't you think corn stalks cut up make sweeter milk than ensilage?

A.—I do not know. I know it makes nice butter and good milk. I would not like to say it is better than ensilage; I really do not know.

Q.—Would you feed straw to stallions?

A.—To all horses that are not getting a lot of work I would sooner give good straw than feed hay alone; it is more easily digested.

Q.—How much more oats would you feed a horse along with straw than you would with hay?

A.—I am speaking more of feeding in the winter season and I would not give much oats anyway. Give him about a half feed of oats twice a day and plenty of good straw.

Q.—Has frozen corn anything to do with abortion?

A.—I do not know that it would, but frozen food is not good for an animal. If you have any smut in your corn that is one of the great causes

---

"THE EFFECT OF STABLE VENTILATION ON THE PROFITABLE FEEDING OF BEEF CATTLE."

By J. H. Grisdale, Agriculturist, Central Experimental Farm, Ottawa.

As you know, our cattle require three things before they can live. They must have food; they must have water and they must have air. How many farmers are willing to give them all the food they will eat; give them all the water they need and then cut off the air; they close the stable door as soon as they go in, they give them a drink, feed them and then go out and shut off the air and leave them that way for the rest of the night. You know that any animal deprived of air, if he should be absolutely deprived of it for a very few minutes, is a dead animal. They could live without water for a while; they could live without food for a long time, but air is the *sine qua non*, they must have air, or they cannot live.

We have not paid sufficient attention to the absolute requirement of air in our barns. It is a subject that is creating considerable stir at the present time, and many of our farmers are thinking of it to a greater extent than formerly; everybody is much more interested in it than they ever were before. We do get a great deal of air in our stables, in spite of the precautions we take to keep it out, and it is a mighty good thing that we do. We must have air or the digestive process cannot go on, and in order that the animals may do the best possible upon the food that we give them it is absolutely necessary that we furnish them with a large supply of air.

As proof of this; take the case stated by Mr. Miller where cattle were fed in a loose open barn and others fed in a tight box in a basement

stable. The animals fed in the loose open barn did much the better. I have had men come to me and say, "I have fed cattle in an old barn with a few boards stuck up on the south side and no paper between, and it is remarkable that they did better than the others that I fed in a warm stable." Therefore I say, while it is important to keep our cattle comfortable and to give them every condition necessary for making gains, we must consider what we mean by comfortable conditions. Comfortable conditions are,—that they have lots of air; that they be kept dry and that they be given the right kind of food.

To illustrate this point, I want to draw your attention to an experiment which we carried on at Brandon last year. We took a bunch of steers and divided them into two lots, fed one lot in a stable fairly well ventilated, about as well ventilated as the average stable of our Ontario farmers, and another lot we fed outside without any protection except a little bit of oak scrub. The lot fed outside weighed 1,100 pound when they started about the first of December. The inside lot weighed about the same. Both lots were fed for 140 days. I think it was 138 days to be exact. The outside lot made 234 pounds gain and the inside lot 251 pounds gain, but the strange thing of all was that the outside lot did not eat quite as much food as the inside lot, and although they made less gains they made these gains at quite a bit lower price. It cost to produce 100 pounds of gain on the outside lot $5.67, and it cost to produce 100 pounds of gain on the inside lot $6.20. There is a difference of about 50 cents in favor of the cattle fed outside, in spite of the fact that they had to warm up the whole of the out-doors before they could raise the temperature and there must have been a considerable loss of heat, but in spite of this handicap the great supply of fresh air seemed to be sufficient to overcome this difficulty. I saw them myself in March, and I never saw a healthier or brighter bunch of steers in all my life, excepting possibly a lot I saw in another part of Manitoba under similar conditions.

I had the experience of feeding a bunch of fifteen steers last year during the early part of the winter at Ottawa and they made better gains during the months of November and December, when they were outside without any protection, except the shed into which they could go to sleep and in which there was hardly room for them to stay in even when stormy, and they made gains of over two pounds a day.

Just to show you the obverse of this picture I want to give you an experiment we conducted at Ottawa five or six years ago. We had a barn 35 feet wide by 42 feet long and we put into that barn some 30 head of steers. It was very poorly ventilated. We fed them there all winter, they cost us something like eight and a half cents a pound for every pound put on and they made very small gains. It was a very unsatisfactory experiment so far as profits were concerned, but it demonstrated to us that steers fed under such conditions were not likely to make a profit. Similar steers taken from the same lot fed in an adjoining building where there was good ventilation made gains of 100 pounds for from $5 to $6. We took this same building, just to prove to ourselves that it did not depend upon the building, but rather upon the lack of supply of air, we ventilated that building thoroughly and put in a lot of similar steers the next winter, and they came out just as well as the ones in our regular feeding barn, and made very much better gains than the lot that had been there the preceding year, in fact made gains for about two-thirds the cost. This proved to us conclusively that ventilation is necessary, and we introduced a most thorough system into our barns.

The methods of ventilation which we recommend are various. There is no one system that carries off first place. There are many systems of ventilation. The great difficulty I find is to get men to control or operate a system properly for I have to do with hired men who will not always look after it in the same way as a person who is interested in the cattle. The average hired man's idea of comfort for cattle is that they be kept at a high temperature; whereas the comfort of an animal lies in their having a plentiful supply of air and in being kept dry, so I have found that the greatest difficulty with any system of ventilation is to keep it working.

I introduced a certain system of ventilation in a stable three years ago and when we could persuade the men to operate it properly, things went nicely, but the moment there came a cold snap, tight went every ventilator and when it came warm again they forgot to open them again. I do not mind closing the inlets a little when it is cold, but when it comes warm they should open them up. I have known men to condemn the King system of ventilation and the reason it did not work was because they did not pay attention to it; they did not open the outlets when they should. It is nearly always from lack of attention that a system does not work. Ventilation is a thing that requires just as much attention as the feeding of the animal. It is a thing that must be attended to every day and every little while.

Just to show you how absolutely necessary it is to give attention to a system of ventilation I might mention an experience we had last winter. We put muslin curtains on a barn, 18 on each side, and when the temperature was such and such outside it was of course necessary to regulate the windows to get the right amount of air and when the temperature rose we had to open them a little more or close them up when the temperature fell outside, but we found another controlling influence which had to be reckoned with. If there was no wind blowing, then we had to open every window. If there was the least current of air then we had to close up some of the windows. I have seen every window open, the temperature outside below zero and the temperature inside around 80° Fahr. Now, that system, without the closest attention, is no good at all. We found it darkened the windows too much and was hard to control.

Another system that we have tried is the Rutherford. We found that to be as satisfactory as any we tried. We have tried the King system and under certain conditions it has worked very well, but it is apt to be neglected. It requires more attention than the Rutherford.

By the Rutherford I mean the system where the air enters at the floor and leaves at the ceiling. The King system of ventilation is where the air enters at the ceiling and leaves at the floor.

Professor King was working on the principle that the foul air consisted largely of carbonic acid gas which would be heavier than pure air and although it would rise to the ceiling at first, it would soon cool and sink to the floor. The Rutherford System goes on the principle that we must have a rapid and constant circulation of air, and to get that we must make use of the principle that the warmer and therefore fouler gases rise and the heavier ones are found at the bottom, therefore we let the heavier air in at the bottom and let the warm air out at the top and have a constant circulation. We have a barn where these two systems can be put in operation. We tried it a while with one and then with the other. We found these disadvantages. Where the air came in at the floor and went out at the ceiling the temperature was uniform. If it was 40 at the floor, it was 40 at the ceiling. We had five or six thermometers and took the reading every night or morning. In that same barn we closed up that system of ventila-

tion and opened up the system where foul air went out at the floor and the temperature at the ceiling was ten to twelve degrees higher than on the ground and the animals were lying in the coldest air in the building. Another objection we found to it was that we had chutes to feed the horses from overhead, and the warm air got in these chutes and there was moisture precipitated and we had to abandon the King system in that stable. We are introducing it in another barn and hope to give it a more thorough trial there. The Rutherford system is thoroughly described in a bulletin issued by the Department of Agriculture for the Dominion, and can be secured by writing for it.

REPORTS OF JUDGES ON POULTRY AT THE EASTERN ONTARIO LIVE STOCK AND POULTRY SHOW, 1909.

By Richard Oke, London.

Orpingtons: Buff, 1st, cock, fair comb and head, good type, level even shade of golden buff, carries his color well down; 2nd, hardly as good in type and a trifle high in color; 3rd, fair type, not so even in color as those ahead. 1st hen, good size and type, nice soft shade of buff throughout, with the exception of a little smut in tail; 2nd, another good sized hen, close up in shape, not so level in top color; 3rd, fails in evenness of color. 1st cockerel, good head, nice full breast, good type, good level buff, different sections blending well together; 2nd, counterpart of first with exception of not being quite so full in breast; 3rd, nice even color throughout, hardly at his best yet, a bit young, not much form color in tail. 1st pullet, hardly up in shape, yet a good fair type, nice even top color; 2nd, not much to choose between them, fails a little in shaftiness; 3rd, another good pullet close up.

White Orpingtons: A rather small class, 1st and 2nd cocks good size and shape, fail in top color. 1st hen, nice shape and pure in color; not very much between 2nd and 3rd. 1st cockerel, good size and shape, but like the cocks, fails top color, a bit brassy; 2nd and 3rd have pretty much the same fault. 3 pullets, not much to choose between them, pure in their white and shapely.

Black Orpingtons: A good big class, some nice shaped birds going down for purple barring. 1st cock, fair head and eye, nice blocky type, full breast and good color throughout; 2nd, another good shaped bird, not so good in color; 3rd, close up. 1st hen, large and shapely, a good color throughout, shown in nice fit; 2nd, good shape and color but fails in size; 3rd, nice shaped hen, hardly so pure in color. 1st cockerel, good head and comb, nice shape and flow of feather; 2nd, another good cockerel, good length of feather, carries his tail a bit gay; 3rd and 4th, close up, but not so pure in their color. 1st pullet, good shaped breast and back nice color throughout; 2nd, a good big pullet nice color a bit gone in lobes; 3rd, fails color to those in front, but is shapely.

Wyandottes: Silver, a real good class shown in nice fit. 1st cock, good shape, full breast, short back, well spread tail, nice striped hackle, with nice lacing free from frosting; 2nd, another good cock fails somewhat in lacing as does 3rd which is not so clean on back. 1st hen, splendid shape, beautifully laced throughout; 2nd, fails a bit in shape, but nicely laced; 3rd, close up. 1st cockerel, good Wyandotte shape, nice open lacing, free from frosting, good wings but a bit dirty on top color; 2nd and 3rd, about the same stamp of lacing, hardly so good in shape. 1st and 2nd pullets,

very little to choose between them, good shape and beautifully laced, good in their black and free from frosting; 3rd, the counterpart of those ahead, fails a trifle in lacing on back near tail.

Golden Wyandottes: 1st cock, good shape, nice laced breast on a good ground color, fails somewhat in striping of neck and saddle; 2nd and 3rd, fails in shape and not so good in lacing. 1st hen, nice and shapely, well laced but a trifle heavy. Balance of class fails somewhat in shape. 1st cockerel fails a little in striping, nicely laced; 2nd and 3rd, not much to choose between them. 1st pullet, nice shape, good lacing, might be richer in ground color.

Partridge Wyandottes: 1st cock, good blocky type, nicely striped neck and saddle, good colored breast. 1st hen, another nice shaped Wyandotte with good pencilling throughout. 1st cockerel, nice blocky shape, about the right shaped back, might be a little richer in color; 2nd, fails size, but a good one. 1st pullet, nice shape and evenly pencilled throughout; 2nd, good pencilling but a bit dense on top and a bit long in back; balance of class a good averaged lot.

Columbians: I was rather disappointed in this class as the majority failed both in color and condition, a number of these shown in poor fit. 1st cock, a good big bird fair shape, but fails in his black. 1st hen, was better in this respect, but was shown in poor fit. 1st cockerel, best in neck striping good size moderate shape a bit off on top color. Probably the best pullet was turned down for absence of spike. 1st pullet, wins on color, not blocky enough in shape for a Wyandotte, balance of class moderate quality.

Buffs: A rather small class, with good average quality, most of the winners being a nice uniform buff and shapely. In A.O.V. Wyandotte class the Black and Silver Pencilled competed in this class and divided first honors. 1st cock and hen, both Blacks, nice shape and color, stood well out, balance of class pencilled. 1st cockerel and pullet went to the Silvers, being more shapely. 1st cockerel, a little small, but nice color throughout 1st pullet, shapely and her pencilling well defined.

Rhode Island Reds, S.C.: A nice class with good average quality. 1st cock, good size and length of body, rich even color; 2nd, fails a bit in comb and evenness of color. 1st hen, good shape and color; 2nd another good shaped hen, fails a bit on color. 1st cockerel, about the best in this variety, shapely with good top and under color; 2nd, another good one, rich underneath. Pullets, winners a nice even lot.

Rhode Island Reds, R.C.: While not so numerous as the Single Comb were shapely and good quality.

By Wm. McNeil, London.

Light Brahmas: 1st cock, a grand big one with good head and comb, splendid hackle, nice length of back, grand tail, good leg and toe feathering; 2nd and 3rd, close up to 1st. 1st hen, grand type, nice head, good comb, grand hackle, good length of back, with a splendid tail and grand leg and toe feathering; this description would do for 2nd and 3rd. 1st cockerel, a beauty with fair comb, nice head, good neck, nice back, grand tail, good leg and toe feathering; 2nd, another nice one, not as good in comb, fair hackle, a little shorter in back, not so good in tail, leg and toe feathers fair; 3rd, close up. 1st pullet, a nice one, good comb, nice head, good back, nice tail, good leg and toe feathering; 2nd, another good one; 3rd, good, but not hardly big enough. While the Light Brahma class was not a big one, I believe the quality was up to last year, and exhibit in this class won the cup for the four best birds in the Show.

Dark Brahmas: A small class. 1st cock, a little small, but good in quality, nice head, fair comb, good hackle, a little short on back, with good tail, good breast, nice leg and toe feathers; 2nd, close up. 1st hen, good, nicely pencilled and good steel grey; 2nd hen, fair. 1st cockerel a little small, quality fair; 2nd cockerel not as good in color. 1st pullet make a nice mate for 1st hen; 2nd, close up.

Buff Cochins: Were a fine class. 1st cock, grand type, nice head and comb, grand in top color all over, but not as good under, grand shaped tail, fine leg and toe feathers, an easy winner; 2nd, another good one; 3rd, close up. 1st hen, one of the best I have seen and an easy winner, she was all Cochin from head to toe, grand head and comb, nice short low neck, full hackle, and about the right length of back, extra fine in cushion, with a low tail, grand leg and toe feathers and close to the ground, uniform all over in color; 2nd and 3rd, both good ones, but a little broken in color, but both good enough to win if first had not been there, balance of class good. 1st cockerel was a beauty, nice comb, good head, nice neck and good back, splendid tail, fine cushion, grand leg and toe feathers, just a little shade high in color, but uniform all over. This will make a sure winner when an old cock. 2nd, another good one, a little larger than first and about as good in type, but hardly as good in color; balance of class good. 1st pullet, a nice mate for first hen, grand Cochin type, nice head and comb, short neck, grand hackle, good back, with fine cushion and tail, nice leg and toe feathering, uniform all over: 2nd, another good one, close up to first; 3rd, not so good in color; balance of class good.

Partridge Cochins: 1st cock, grand big Cochin, nice shape, good head and comb, nice neck, good back, nice saddle, well striped, good tail, nice leg and toe feathering, splendid colored breast; 2nd, another good one close up to first very little choice between the two: balance of class good. 1st hen, in splendid show condition and right color, not hardly big enough, but grand in quality, good head and comb, nice striped hackle, well pencilled back, good cushion, nice tail, fine leg and toe feathering, grand in fluff; 2nd, another good one close up to first, but hardly as good a mahogany color; balance of class good, 1st cockerel, a nice one about as good as first cock, nice head and comb, good striped hackle, good color, nice back, good saddle, well striped short tail, good solid block breast, nice leg and toe feathers; 2nd, close up, only hardly as good in color. 1st pullet, a beauty with fair head and comb, nice, well striped hackle, well pencilled back, grand cushion, nice tail, well pencilled fluff, good leg and toe feathers; 2nd, run close for 1st place; 3rd, good, but a little small.

Black Cochins: Were a small class, quality fair.

White Cochins: Another small class and I was sorry to see it as there is nothing nicer than a good White Cochin. What was there was good.

Black Langshans: 1st cock, was a good one, the right type, grand color, nice shape. 1st hen, was a splendid type; 2nd, another good one. 1st cockerel was a good one, mate for 1st cock, good head and comb, long neck, a little short on tail, good pair legs; 2nd, a fair bird. 1st pullet, was a good one, nice head and comb, good long neck, stood well up with a nice back, good color, nice high tail, good length of leg.

Black Javas: 1st cock, grand bird, splendid color, good shape, an easy winner; 2nd, another good one; 3rd, close up. 1st hen, a nice one, splendid color, good head and comb, nice pair of legs; 2nd, another nice one, close up to first; balance of class good. 1st cockerel, nice head and comb, good neck, with a nice long back and well carried tail, grand in color this I believe was the best bird in class; 2nd, another good one, but a little short on back; 3rd, close up; balance of class good. 1st pullet, a nice mate for

first cockerel, grand shape, good length of back, good color; 2nd and 3rd, both good ones; balance of class fair.

Mottled Javas: 1st a grand big cock, well mottled and in splendid condition, an easy winner; 2nd a fair bird, but not as big. 1st hen, another good one, good mate for first cock, grand size, good shape, well mottled all over; 2nd, good, but smaller. 1st cockerel, a big fellow, an easy winner; 2nd, small, but good. 1st and 2nd, pullets, both grand, fit to win anywhere.

Black Leghorns: Was a nice class, 1st cock, fair head and comb, good ear lobes and wattles, nice length of back, carried a good tail; 2nd another fair bird close up to 1st; 3rd, about even, although a little off on comb. 1st hen, a nice little one, good head and comb, nice lobe and wattle, nice shaped neck, fair length of back, carried a good tail; 2nd, another good one, good size, but not as good in color, fair tail; 3rd, close up; balance of class all fair. 1st cockerel, a good one, nice head and comb, fair lobes, good wattles, good shaped neck, nice back, not extra good in tail, nice colored legs; 2nd, another good one, not as good in comb, good ear lobes and wattles, not as good in legs; 3rd, close up; balance of class fair. 1st pullet, was a nice little one, grand head comb and ear lobes, nice back and tail, splendid in color; 2nd, close up, would make a good mate for her; 3rd, fair ear lobes and good comb, good shape, but off in color; balance of class good.

S. C. Buff Leghorns: 1st cock, a nice one, good head and comb, fair ear lobes and wattles, nice neck, good back, nice tail, well carried, with a very light surface color, but beneath splendid; 2nd. a fair head and comb, nice neck, but too dark across the shoulders, tail nice, another fair bird. 1st hen, a good one, a splendid comb, nice wattles and ear lobes, nice length of back, good shaped tail, good even color; 2nd, another good one. fair comb, ear lobes not as good as first, and hardly as good in color; 3rd, close up to 2nd. 1st cockerel, a good one, fair head and comb, nice lobes, good neck, nice long back and fair color, good tail; 2nd, close up, not hardly as good in comb, a little shorter in back; 3rd, fair. 1st pullet, good head and nice comb, good ear lobes and wattles, nice length of back, good shaped tail, but a little off on the two top feathers; balance of class all fair.

R. C. Brown Leghorns: 1st cock, a fair bird, not extra good in comb or ear lobes, fair striped hackle, good color back and fair length, not hardly striped enough in saddle, carried a good tail; 2nd, another fair bird. 1st hen, good head, nice comb, ear lobes and wattles, good hackle, nice back, good in color, fair tail; 2nd, another fair bird, fair comb, ear lobes and wattles, a little dark on back, nice tail; 3rd, close up to 2nd. 1st cockerel was a little beauty, he was small, but as perfect as a picture, I never went passed his coop but I had to look at him, he had a fair comb, nice ear lobes and wattles, and a grand striped neck, splendid in color, nice length of back with well striped saddle, carrying a nice tail, and a good pair of legs; 2nd and 3rd, both fair. 1st pullet, was a nice mate for first cockerel, only not just as good, she had a nice comb, good ear lobes and wattles with a grand shaped back, with nice, mellow pencilling, good shaped tail; 2nd and 3rd, both fair.

A. O. V. Leghorns: White Rosecombs, 1st cock, a grand big bird, a little off on comb, good shape, carried a fine tail, and as white as snow: 2nd, another good one, but comb a little to one side; 3rd, carried his tail too high, balance of class fair. 1st hen, a good one, fair comb, good wattles and ear lobes, nice neck, good length of back, carried a nice tail; 2nd, another fair bird, not hardly as good in comb, ear lobes and wattles all right, a little short on back and on legs. 1st cockerel, a fair bird, not hardly good enough on comb, nice ear lobes and wattles, nice length of back, carried a fair tail, good length of legs; 2nd, a little off on comb and wattles,

a little short on back; 3rd, close up. 1st pullet, a nice one, an easy winner, nice head and comb, good length of neck, good back, carried nice tail, good white all over; 2nd, another nice one, but hardly as good in shape as first; 3rd, fair.

Spanish: 1st cock, was a good one about as good as I have seen, face a little rough, but grand in color, with great length, good color plumage, about the right type for a Spanish; 2nd, another good one, 1st, hen, nice comb, good face, nice length and smooth, nice color plumage, good shape; 2nd and 3rd, both good. 1st cockerel, was a good one in splendid show shape, fair comb, good ear lobes and wattles, nice face; 2nd and 3rd, both close up; 1st pullet, was in best of condtion for showing, good comb, nice ear lobes and wattles, good face, good shape, and splendid in plumage; 2nd, and 3rd, both good ones. The Spanish class was as good as I have ever seen and there was very little choice between the young stock.

Andalusians: 1st cock, a nice one, fair head and wattles, good neck, nice back, nice tail, and in good show shape; 2nd, close up to first. 1st hen, a nice one, good head, nice comb, good ear lobes and wattles, she was well laced all over and uniform; 2nd, another good one, but a little too dark in lacing; 3rd, close up to second. 1st cockerel, a good one, good head and comb, nice wattles and ear lobes, nice hackle and good back, nice tail with grand laced breast; 2nd, hardly so good in comb as first, good hackle, fair back, nice tail, but not as well laced on breast; 3rd, close up to second. 1st pullet, a good one, and about the same color all over, with a nice comb, good ear lobes and wattles, well laced back, good tail, well laced breast; 2nd, fair comb, good ear lobes and wattles, a little mossy in lacing; 3rd, close up to second.

Silver Grey Dorkings: 1st cock, fair bird, nice head and comb, nice color hackle and back, nice legs and toes, carried a grand tail with good breast, 2nd, another good one, hardly as good in comb as first, a little too dark in hackle, good shaped back, nice tail, nice short legs, good toes; 3rd, had been a grand bird, but is getting old, he had lost an eye. 1st hen, fair, nice comb, good head, nice neck, good back, nice breast, nice and short on leg; 2nd, another good one, fair comb, good neck, good length of back, but a little too dark in color; 3rd, close up. 1st cockerel, a fair bird, good comb, nice ear lobes and wattles, good neck, nice length of back, nice breast, good short legs, good toes; 2nd, another nice one, hardly as good in comb, a little striped in hackle, nice length of back and good breast, not hardly as good in toes; 3rd, close up to second. 1st pullet, a good one, nice head and comb, good neck, with nice long back and good color, carried a nice tail, fair breast, good short legs with good toes; 2nd and 3rd, both good.

Colored Dorkings: 1st cock, a grand bird, good comb, nice ear lobes and wattles, nice colored neck, good back, but a little light on saddle, good breast, nice tail, good short legs, splendid toes; 2nd, a grand bird, and just as good in color, but a little too small. 1st hen, a good one, nice head and comb, good neck, grand colored back of good length, good tail, fine breast; 2nd, another good one, not hardly so long or good on back, a little better breast; 3rd, close up to second. 1st cockerel, a good one, nice head and comb, good hackle, nice back, good length, carried a nice tail, but sickles were a little white at base; 2nd, was a nice one with fair head and comb, good hackle, not so long on back as first; 3rd, close up to second. 1st pullet was the best in the class, nice head and comb, splendid neck, good colored back, nice length, grand colored tail, good breast, nice short legs with good toes; 2nd, another good one, about as good as first, but lacking in size; 3rd, another good one but not so good in color.

White Dorkings: Were a small class, 1st cock, a fair bird; 1st and 2nd hens, both good. 1st, 2nd and 3rd, cockerels fair; also pullets, there is room for improvement in this class.

Houdans: 1st cock, a grand bird, splendid size, good color, a shade light, with a nice crest and beard, good long back, carried a nice tail; 2nd, another good one, but a little small; 3rd, close up. 1st, was a grand hen, nice color all over, with a nice crest and beard, good length of back with deep body, the right length of leg well toed; 2nd, another good one, but a little undersized not hardly so good in crest or beard; balance fair. 1st cockerel, a nice one, good crest and beard, nice shaped back, grand in color, good depth, and will make a grand old cock; 2nd and 3rd, both good ones; balance of class fair. 1st pullet, a nice one, splendid color, with nice crest, good beard, nice length of back, good shape; 2nd, another one close up to 1st, not much between them; 3rd, not as good crest or beard; balance of class fair.

Creve Coeurs: 1st cock, a nice one, good crest, nice color, good back, nice shape; 2nd, close up. 1st hen, a good one, fine crest, good length of back, grand in color; 2nd, a good one, but loses to first on color; 3rd, close up to second. 1st cockerel, fair bird, nice crest, good shape, nice color; 2nd and 3rd, close up. 1st pullet, a nice one, good crest, nice shape, good color; 2nd close up to first.

La Fleche: 1st cock, a good one, nice head and comb, wattles and ear lobes, good color, nice shape; 2nd, close up. 1st hen, good comb, wattles and ear lobes, nice color, good length of back; 2nd and 3rd, both good. 1st cockerel a nice one, good head, nice comb, fair ear lobes and wattles, nice long back, good color; 2nd, another fair bird. 1st pullet, good comb, fair ear lobes and wattles good length of back, nice color; 2nd hardly as good in comb; 3rd, close up.

Faverolles: This is a small class, and it is a pity some of the breeders do not take hold, as they are a good variety.

Black Hamburgs: A fine class, 1st cock, a good one, fit to win anywhere, nice head and comb, good ear lobes, with a nice shaped, good-colored back, with a grand tail, fine color nice breast; 2nd, another good bird, but hardly in good condition for showing; 3rd, nice colored bird, but very rough about the head; balance of class fair. 1st hen, a good one, nice head and comb, good color, an easy winner; 2nd, another fair one with good comb, ear lobes and wattles, but off in color; 3rd, a grand hen, but off in color; balance fair. 1st cockerel, a fair bird, but not in good show shape; 2nd, about as good, only a little light colored in legs. 1st pullet, a good one, nice head, comb and ear lobes; 2nd another fair bird; 3rd, a fine big pullet, but had been shown too much so that her comb had grown and went over.

G. P. Hamburgs: 1st cock, a nice one, good head, comb and nice ear lobes, splendid in shape, grand in color, with a nice, well laced tail; 2nd, another good one, but a little too short on legs made him look too blocky. 1st hen, was a grand one, the same color all over, very finely pencilled; 2nd and third were too coarse in pencilling. 1st cockerel, was a mate to first cock, nice head and comb, grand in color with a good, well laced tail; 2nd and 3rd, both fair. 1st and 2nd pullets, both good birds and just mates for first hen.

S. P. Hamburgs: 1st cock, a good one, nice color with a grand laced tail; 2nd, was pullet bred. 1st hen, a good one; 2nd and 3rd, were both cockerel bred. 1st cockerel, a nice one, good head, comb and ear lobes, with a nice laced tail; 2nd and 3rd, both pullet bred. 1st and 2nd pullets, both grand ones; 3rd, was cockerel bred.

G. S. Hamburgs: 1st cock, fair bird, nice comb, good ear lobes, nice back, good tail, fair breast; 2nd, not so good on comb or ear lobes; 3rd,

close up to second. 1st hen, a grand one, about as good as I have seen anywhere; 2nd and 3rd, both good. 1st cockerel, was a grand big bird, full-grown, with a good comb, nice ear lobes and wattles; 2nd, a nice little one, hardly old enough, I believe will make a grand old cock bird. The Golden Spangled hen won the special for best female in Hamburg class. she is a grand hen. 1st and 2nd pullet, both good, not much choice between them.

S. S. Hamburgs: A grand class, 1st cock, I think as good an S. S. as I have seen for years, he won at Guelph, and it would take a good one to beat him; 2nd, another good one, but not quality of first; balance fair. 1st hen, a good mate for first cock, I believe she won first at Boston and the Ontario. The two hens that should have been second and third I had to leave out for feathers between toes, I felt sorry to have to do so, the ones that went in were poor. 1st cockerel, was a nice one, a little out of condition, he had two lumps in his face, seemed to me roup or a cold had settled there; 2nd and 3rd, fair birds the 3rd prize one would make a grand pullet breeder, he had the right shaped spangle and good color. 1st pullet was a nice one and would make a mate for the one that won at Guelph; 2nd and 3rd, fair.

Red Caps: Were a small class, but as good as I ever saw.

OFFICERS AND COMMITTEES FOR EASTERN ONTARIO LIVE STOCK AND POULTRY SHOW, 1909-10.

Officers.

President,—Peter White, Pembroke.

Vice-President,—John Bright, Myrtle.

Secretary-Treasurer,—D. T. Elderkin, Parliament Buildings, Toronto.

Board of Directors.—Peter White, Pembroke; John Bright, Myrtle; J. H. Grisdale, Ottawa; John Gardhouse, Highfield; W. F. Stephen, Huntingdon, Que.; W. A. Wallace, Kars; N. F. Wilson, Cumberland; R. Richardson, South March; Andrew Whitelaw, Guelph; P. O. Collins, Bowesville; D. C. Flatt, Millgrove; J. C. Smith, Ottawa; W. H. McNish, Lyn; Geo. Robertson, Ottawa; John A. Belford, Ottawa; Geo. Higman, Ottawa; W. F. Garland, Ottawa; Wm. Smith, Columbus; Dr. R. E. Webster, Otawa; J. J. Black, Winchester; A. P. Westervelt, Toronto.

Executive Committee.—The President, Vice-President, J. H. Grisdale, Geo. Robertson, J. C. Smith, A. P. Westervelt.

Committee on Horses.—John Bright, Myrtle; Wm. Smith, Columbus; Dr. R. E. Webster, Ottawa; J. J. Black, Winchester; Jas. K. Paisley, Ottawa; Ambrose Shawville, Que.; B. Rothwell, Ottawa; J. W. Allison, Morrisburg; Robert Hunter, Jr., Maxvile; Geo. Hay, Lachute, Que.

Committee on Cattle.—J. H. Grisdale, Ottawa; John Gardhouse, Highfield; N. F. Wilson, Cumberland; Peter White, Pembroke; Thos. McDowell, Shawville, Que.; Hon. W. C. Edwards, Rockland; T. J. Graham, Mosgrove; W. F. Stephen, Huntingdon, Que.; R. Richardson, South March; Samuel McLelland, Beachburg.

Committee on Sheep.—W. A. Wallace, Kars; N. F. Wilson, Cumberland; R. Richardson, South March; Andrew Whitelaw, Guelph; R. R. Sangster, Lancaster; Geo. Bradley, Carsonby; John Barr, Dunmore.

Committee in Swine.—P. O. Collins, Bowesville; D. C. Flatt, Millgrove; J. C. Smith, Ottawa; J. H. Grisdale, Ottawa; David Barr, Jr., Renfrew; W. H. McNish, Lyn; A. H. Foster, Twin Elm.

Dairy Committee.—W. F. Stephen, Huntingdon, Que.; J. H. Grisdale, Ottawa; N. Sangster, Ormstown, Que.; W. H. McNish, Lyn; Jos. Meilleur, Ottawa; R. R. Ness, Howick, Que.; Sen. D. Derbyshire, Brockville; P. Clark, Ottawa.

Committee on Poultry.—Geo. Robertson, Ottawa; John A. Belford, Ottawa; A. W. E. Hellyer, Ottawa; Geo. Higman, Ottawa; W. F. Garland, Ottawa; F. J. Blake, Almonte; W. H. Carleton, Ottawa; F. C. Elford, McDonald College, Que.; D. McKellar, Hawkesbury.

Committee on Seeds.—T. G. Raynor, Ottawa; Geo. Boyce, Merivale; B. Rothwell, Ottawa; G. F. Bradley, Carsonby; J. C. Stuart, Dalmeny; G. H. Clark, Ottawa; L. H. Newman, Ottawa; Osborne Wright, Beachburg.

Reception Committee.—Peter White, Pembroke; His Worship the Mayor of Ottawa; H. F. McGivern, M.P., Ottawa; A. E. Fripp, M.P.P., Ottawa; G. H. Higman, Ottawa; Fred Cook, Ottawa.

FINANCIAL STATEMENT

OF THE EASTERN ONTARIO LIVE STOCK AND POULTRY SHOW TO MARCH 31ST, 1909.

RECEIPTS.

Cash on hand, December 31, 1907	$2,680 19	
Legislative Grant	7,321 00	
Entry Fees	2,718 75	
Gate Receipts and Farmers' Institute Fees	1,045 85	
Sale of Carcasses and Hides	2,023 48	
Live Birds Sold	196 50	
Canadian Ayrshire Association, through Dominion Cattle Breeders' Association, special prizes	32 50	
Holstein-Friesian Association, special prizes	140 00	
Shorthorn Breeders' Association, through Dominion Cattle Breeders' Association, Grant	135 00	
Yorkshire Swine Breeders' Society, Grants	100 00	
Berkshire Swine Breeders' Society, Grant	20 00	
Dominion Swine Breeders' Association, Grants	150 00	
Canadian Clydesdale Horse Association, Grant	400 00	
Special Cash Prizes	162 50	
Special Cash Prizes to be awarded 1910	42 00	
Advertising space in prize list and building	130 00	
Memberships received with entry fees	4 00	
Sale of Catalogues	11 65	
Miscellaneous	7 55	
		$17,320 97

EXPENDITURES.

Directors' Expenses	$ 91 28	
Postage and Stationery	186 22	
Printing	685 15	
Advertising	1,513 14	
Office Expenses and Help	338 45	
Telegraph, Telephone and Express	120 59	
Judges, Judges' Clerks and Lecturers	706 75	
Superintendents and Assistants	1,108 85	
Dressing Carcasses, Block Test	47 00	
Prize Money	8,923 25	
Carcasses	2,023 38	
Sale of Birds in Sale Class	193 50	
Freight Refunds	360 60	
Refunds Entry Fees	55 25	
Special Exhibits of Live Stock, 1908	225 00	
Reporting Meetings	150 00	
Straw and Shavings	185 09	
Poultry Supplies including Feed	97 44	
Lighting Building	115 20	
Heating Building	420 33	
Fitting Building	89 69	
Dairy Test	40 00	
Lunch Room	60 70	
Rent of Cots	15 00	
Music	122 00	
Payments to Farmers' Institute Secretaries	12 30	
Express on Poultry Coops	36 40	
Insurance on Poultry Coops	11 25	
Live Stock Memberships	4 00	
Auctioneer	10 00	
Auditor	9 00	
Miscellaneous	7 87	
		$17,964 68
Balance due Treasurer		$643 71

Examined and found correct,
this 27th day of April, 1909.
(Signed) W. G. LINDSEY,
Auditor.

(Signed) PETER WHITE,
President.
(Signed) D. T. ELDERKIN,
Treasurer.

ONTARIO HORSE BREEDERS' ASSOCIATION.

ANNUAL MEETING.

The annual meeting of the Ontario Horse Breeders' Association was held in Room "G," King Edward Hotel, Toronto, on Friday, January 15th, 1909 at 9.30 a.m.

The President, Wm. Smith, occupied the Chair.

It was moved by John Bright, seconded by James Henderson,—"That the minutes of the previous meeting be taken as read." Carried.

Report of the Executive.

The Secretary then read the following report of the Executive Committee to the members of the Association:

The Horse Breeders' Association has now entered upon its third year as an organization. During that time two exhibitions have been held, the third being conducted at the present time. Each of these shows have been very successful, being well patronized by the breeders and owners and great interest being taken by the Agricultural community generally, as shown by the large attendance each day during which the exhibitions were held.

The Exhibitions this year is being held at the Union Stock Yards in West Toronto. It was considered by the Directors that in order that full advantage could be taken of having the large number of high-class breeding horses brought together, there should be an opportunity given to the visitors to inspect the horses at other times than when the prizes were being awarded. In order to do this it was necessary times than when the prizes were being awarded. In order to do this it was considered necessary to have well lighted stabling accommodation connected with the Exhibition Arena. During the past year the Union Stock Yards Company made a favorable proposition to provide the necessary accommodation both as to stables and exhibition building for the 1909 Show. After giving the matter careful consideration, it was decided to accept the accommodation offered, and everything possible has been done by the management of the Stock Yards Company to assist in the success of the Show.

The number of entries in the various classes are as follows:

Clydesdales, (Open Class)	66
Canadian-Bred Clydesdales and Shires	34
Shires, (Open Class)	15
Hackneys	10
Standard Breds	12
Thoroughbreds	12
Ponies	9
Heavy Draughts	22
	180

Membership.

The Membership for 1908 was made up as follows:

Canadian Clydesdale Association	359
Canadian Shire Association	11
Canadian Hackney Society	9

For 1909 the membership of the Association is.

Canadian Clydesdale Association	216
Canadian Hackney Association	11
Canadian Shire Association	20
Canadian Thoroughbred Association	12

This will provide for the following Directors:

Clydesdales	5
Shire	2
Hackney	2
Thoroughbred	2

Owing to the name of the representative from the Ontario Horse Breeders' Association to the Canadian National Exhibition being required to be sent to the Exhibition Association before the 10th of January, the Executive appointed the President to represent this Association. This appointment should be confirmed and the representative for 1910 should be appointed.

During the past year it was decided to hold a Horse Show in connection with the Eastern Ontario Live Stock and Poultry Show at Ottawa. The Board of Directors of that Association have previously been nominated by the Cattle, Sheep and Swine Breeders' Associations, which Associations nominate members residing in the eastern part of the Province, in addition to their Presidents, who are members of the Exhibition Association by virtue of their office. The Ontario Horse Breeders' Association will therefore be entitled to nominate two representatives to this Board for 1910. The coming Exhibition will be held next week, January 19th to 22nd. Well heated and well lighted stable and ring accommodation has been provided, the complete show being held under one roof, having 70,0000 feet of floor space, equal to a building 600 feet long by 120 feet wide. Entries for horses will be accepted up to January the 15th.

At the session of the Legislature of 1908, there was appropriated $20,000 to erect an addition to the Winter Fair building at Guelph to provide more accommodation for the live stock and poultry at present exhibited and also to provide stabling accommodation and an arena for horses. This amount was supplemented by a grant of $10,000 by the City of Guelph. When tenders were called for, it was found that several thousand dollars more would be required and it was decided to allow the matter to stand over to try and procure additional funds from some other source.

In June of 1908, notice was given by the Railroad Companies of the withdrawal of the privileges of partial unloading out of cars shipped to the western Provinces of pure-bred breeding stock consigned to different points along the direct route to the destination. This privilege had previously been allowed upon payment of a shunting charge of $2. This would materially prevent the shipment of stock to the west except when sold in car-loads, and as the chief trade in pure-bred stock between Ontario and the west is made up of sales of smaller lots than car-loads, these smaller lots could not be delivered except at almost prohibitive rates. This matter was considered to be so vital to the breeders of pure-bred stock, that it was decided to have the President of this Association, together with representatives of other Associations, the Minister of Agriculture and the Dominion Live Stock Commissioner, go to Montreal to ask the Railroad Officials to reconsider the regulation. The mission, we are glad to report, was entirely successful.

Notice was also given by the Railway officials that the exhibition privileges given to horses shows entitling unsold exhibits to free return, were to be withdrawn. This it was considered would so materially affect the shows at West Toronto and the coming show at Ottawa, that it was decided it would be wise to use every means possible to have the exhibits returned free. A committee was therefore appointed, and an appointment made with the traffic officials at Montreal and it was agreed by them to postpone the date at which the order was to come into effect. Unsold exhibits will therefore be returned free as previously.

Owing to the general provincial elections which were held during the past year, it was not considered opportune to urge upon the Government the recommendations suggested at our last annual meeting, regarding a system of inspection of stallions. It is also felt that since that time the question will have been considered by those interested and possibly some new ideas may have been suggested. It is therefore recommended that this matter should be further discussed and that perhaps a bill along this line should be drafted and submitted to the Minister of Agriculture with a request to have it submitted during the present year to breeders and all others interested, with the object of having the various clauses thoroughly discussed and clearly understood and in this way to know everything which could be said in favor of such a bill and everything whilh could be brought out against it.

The financial statement for the year ending December 31st, 1908, is as follows:

FINANCIAL STATEMENT OF THE ONTARIO HORSE BREEDERS' ASSOCIATION.

FOR THE YEAR ENDING DECEMBER 31ST, 1908.

Receipts.

Legislative Grant	$2,800 00
Grant, Canadian Clydesdale Association	1,300 00
Grant, Canadian Hackney Association	100 00
Grant, Canadian Shire Association	50 00
Grant, Canadian Pony Society	25 00
Membership, Canadian Clydesdale Association	20 00
Membership, Canadian Shire Association	15 00
Membership, Canadian Hackney Association	15 00
Entry Fees	502 40
Gate Receipts	787 50
Sale of Catalogues	67 90
Advertising in Prize List	147 00
Miscellaneous	30
	$5,830 10

Expenditures.

Balance due Treasurer, January 1st, 1908	$ 28 85
Postage and Stationery	55 50
Printing and Advertising	713 37
Office Help	21 50
Telegraph and Telephone	34 47
Interest and Exchange	14 00
Directors' Expenses	148 75
Judges' Fees and Expenses	262 35
Superintendent and Assistants	229 80
Rent of Show Building	500 00
Fitting building, and Material for Ring	184 81
Heating Building	255 05
Band	110 00
Prize Money	3,049 00
Entry Fees Refunded	4 00
One half, Special Horsemen Dinner	213 85
Commission on Advertising Prize List, 1909	30 25
	$5,855 55
Balance due Treasurer	25 45

Audited and Found Correct,
this 14th day of January, 1909.
(Signed) G. de W. GREEN,
Auditor.

All of which is respectfully submitted:

WM. SMITH. J. M. GARDHOUSE.
JOHN BOAG. JAS. HENDERSON.
JOHN BRIGHT. A. P. WESTERVELT.

It was moved by William Smith, seconded by John Boag,—"That the report of the executive as read be adopted." Carried.

It was moved by John Bright, seconded by James Henderson,—"That the appointment of the President, Wm. Smith, by the Executive, as the representative of the Ontario Horse Breeders' Association for 1909 to the Canadian National Exhibition be confirmed." Carried.

It was moved by John Boag, seconded by John Gardhouse,—"That the first paragraph of Article 3 of the Constitution be amended as follows:

The members shall consist of the members of the following Associations residing in the Province of Ontario, who have recorded at least one pedigree as breeder or importer during the two proceeding calendar years, provided Article 4 has been complied with." Carried.

It was moved by John Bright, seconded by J. M. Gardhouse,—"That the following section and sub-sections be added to Article 3 of the Constitution:

(*d*) Joint stock companies qualifying for membership from any record association may nominate one or two of the officers of the company for members of this Association, and if the Secretary of the company forwards to the Secretary of this Association the names and addresses of the said nominees (or nominee) on or before the 10th day of January of each year, they shall be members of this Association.

Any advertised partnership firm qualifying for membership in this Association from any record Association, shall be entitled to two members, if, on or before the 10th day of January of each year such advertised partnership firm notifies the Secretary of this Association of the names and addresses of the two members of the firm who will act as representatives of the said partnership firm.

Provided,—

1. That in case no nomination is made as provided in the section above, by any one advertised partnership firm or joint stock company, the said firm or company shall only be entitled to one membership in this Association.

2. That if at any time during a meeting there is any dispute as to the proper representative from any advertised partnership firm or joint stock company, the matter shall be referred to the presiding officer whose decision shall be final; if a dispute should arise at any other time the matter shall be referred to the Executive whose decision shall be final.

3. That not more than one member of one firm or more than one representative of a joint stock company, shall be eligible to the office of director." Carried.

It was moved by R. E. Gunn, seconded by John Boag,—"That the drafting of the bill regarding a system of inspection of stallions be left in the hands of the Executive of the Ontario Horse Breeders' Association to be dealt with, immediately or as soon thereafter as possible, with a view to laying the same before the Minister of Agriculture at the earliest possible moment, and that Messrs. J. J. Dixon and Geo. Pepper be asked to confer with the Executive in regard to the drafting of the same." Carried.

The election of Directors resulted as follows:

From Canadian Clydesdale Association.—A. G. Gormley, Unionville; John Bright, Myrtle; Walter Renfrew, Toronto; Thomas Graham, Claremont; James Henderson, Belton; Wm. Smith, Columbus; R. E. Gunn, Beaverton; A. E. Major, Whitevale.

From Canadian Shire Association.—J. M. Gardhouse, Weston; John Gardhouse, Highfield.

From Canadian Hackney Society.—E. C. H. Tisdale, Beaverton; John A. Boag, Queensville.

From Canadian Thoroughbred Association.—Wm. Hendrie, Hamilton; Dr. R. E. Webster, Ottawa.

From Canadian Pony Society.—J. G. Hanmer, Brantford.

Representatives to Fair Boards:

Canadian National Exhibition.—Wm. Smith, Columbus.

Western Fair.—Wm. Mossip, St. Marys'; O. Sorby, Guelph.

Eastern Ontario Live Stock and Poultry Show.—Dr. R. E. Webster, Ottawa; J. J. Black, Winchester.

(*A list of members is published in the Appendix to this Report.*)

ONTARIO HORSE BREEDERS' EXHIBITION.

HELD AT UNION STOCK YARDS, WEST TORONTO, ON JANUARY 13TH TO 15TH, 1909.

LIST OF PRIZE WINNERS.

Clydesdale Stallions foaled previous to Jan. 1, 1905.

1st—Sir Marcus (imp.) [7790] (13205), bay, ratch on face, white legs, foaled 1903. Bred by Wm. Burns, Bowfield, Scot. Exhibited by Graham Bros., Claremont Ont.; sire, Sir Simon [5406] (10465); dam, Bowfield [13878] (18569), by Breadalbane (1978).

2nd—President Roosevelt (imp.) [7759] (13651), bay, face and legs white, foaled May 1st, 1902. Bred by Matthew Marshall, Bridgebank, Stranraer, Scot. Imported and exhibited by Smith & Richardson, Columbus, Ont.; sire, Marcellus [4683] (11110); dam, Young Swallow [5299] (13535), by Excelsior [4191] (5751).

3rd—Duke of Malton (imp.) [7768] (12947), black, blaze, four white legs, foaled 1903. Bred by Wm. Watson, Millom Castle, Millom, Eng. Imported and exhibited by Smith & Richardson, Columbus, Ont.; sire, Sir Everest [4840] (10917); dam, Nell of Millom Castle [10031] (15335), by Loudonderry [3930] (7934).

4th—Debonair (imp.) [8776] (12937), brown, ratch, four white legs, foaled July 26th, 1903. Bred by James Stewart, Corscaplie, Dunblane, Perthshire, Scotland Imported and exhibited by J. F. Elliott, Oxford Centre, Ontario; sire, Hiawatha [3430] (10067); dam, Madge Carruchan [3980] (12934), by Prince Carruchan [6679] (8151).

5th—Marchfield Baron (imp.) [8432] (13629), brown, foaled 1904. Bred by Robert Wilson. Exhibited by Dalgety Bros., London, Ontario; sire, Prince Shapely [3094] (10111); dam, Marchfield Dora [15665] (17698), by Macmeekan [7001] (9600).

6th—Ardnahoe (imp.) [4501] (12804), brown, stripe on face, four white legs, foaled May 1st, 1904. Bred by Mrs. Ferguson, Ardnahoe, Bute, Scotland. Imported and exhibited by John A. Boag & Son, Ravenshoe; sire, Pride of Blacon [4072] (100837); dam, Arran Lily [6564] (15495), by Mountain King [4973] (7074).

7th—Culdrain Prince (imp.) [6148] (12517), brown, blaze, near hind foot white, foaled March 29th, 1902. Bred by Lieut-Col. C. G. Gordon, Culdrain, Gartley, Scotland. Imported and exhibited by T. H. Hassard, Markham, Ontario; sire, Prince Thomas [4028] (10262); dam, May of Culdrain (12489), by MacLennan [4910] (6048).

8th—Sir Henry (imp.) [6104] (13200), bay, foaled 1904. Bred by A. M. Gregory. Exhibited by Smith & Richardson, Columbus; sire, Prince Thomas [4028] (10262); dam, Gem [9186] (16116), by Primate [4058] (10099).

9th—Brave Nelson (imp.) [8786] (12872), black or very dark brown, small white mark on forehead, foaled 1903. Bred by G. & C. Nelson, Stockbridgehill, Ecclefechan, Dumfreisshire, Scotland. Imported and exhibited by T. H. Hassard. Markham, Ont.; sire, Prince Tom [4145] (11149); dam, Jess of Stockbridgehill [16495] (16982), by Raeburn [6345] (9833).

Clydesdale Stallions foaled in 1905.

1st—Black Ivory (imp.) [7761] (13367), black, white face, hind legs and off forefoot white, foaled April 19th, 1905. Bred by James Durno, Jackstown, Rothie, Norman, Scotland. Imported and exhibited by Smith & Richardson; sire, Everlasting [5346] (11331); dam, May Blossom [10365] (16058), by Prince Thomas [4028] (10262).

2nd—Buttress (imp.) [6812] (13392), bay, white hairs, face and legs white, foaled May, 1905. Bred by Mrs. Gall, Smiddyburn, Rothie-Norman, Aberdeenshire, Scotland. Imported and exhibited by John A. Boag & Son, Queensville, Ontario; sire, Everlasting [5346] (11331); dam, Lady Rose [14570] (17659), by Gold Mine [2904] (9540).

3rd—Baron Laird (imp.) [8445] (13335), brown, face and legs white, foaled May 23rd, 1905. Bred by John McDowall, Girdstingwood, Kircudbright, Scotland. Imported and exhibited by Graham Bros., Claremont; sire, Baron's Pride [30671] (9122); dam, Trilby of Girdstingwood, [15730] (16845), by Woodend Gartly [3847] (10663).

4th—First Baron (imp.) [6413] (13477), bay, blaze, four white legs, foaled 1905. Bred by James Hamilton, Drumburle, Ayr, Scotland. Imported and exhibited by T. H. Hassard, Markham, Ontario; sire, Hiawatha [3430] (10067); dam, Jean of Drumburle [9879] (vol. 29, page 10, S.), by Triumph [6414] (9864).

5th—Craignair (imp.) [7793] (13850), brown, stripe on face, off hind ankles white, little white on near hind hoof-head, foaled 1905. Bred by Geo. Baird, Meikle Farm, Dalbeattie, Scotland. Imported and exhibited by Graham, Renfrew & Co., Limited, Bedford Park, Ontario; sire, Lothian Again [7430] (11804); dam, Mall 2nd [13880] (13691), by Mactopper [2800] (8831).

6th—Meaburn King (imp.) [8806] (14556), black, blaze, off foreleg white, white on knee, hind legs white, foaled 1905. Bred by Thomas Winter, Meaburn Hall, Shap,

Westmorland, England. Imported and exhibited by T. H. Hassard, Markham, Ont.; sire, Montrose Prince [8810] (11834); dam, Mabel [16480] (18516), by Zadkiel [2424] (10482).

7th—Inheritor (imp.) [7765] (13855), brown, foaled 1905. Bred by Ferrier Pace. Exhibited by Smith & Richardson, Columbus, Ontario; sire, Hiawatha [3430] (10067); dam, Buchlybie Bell [13801] (18124), by Cassabianca [4843] (10523).

8th—Squire 8th (imp.) [6810] (13786), brown, star, hind legs and off forefoot white, foaled May 22nd, 1905. Bred by Allan Murray, Castlemilk Mill, Lockbie, Scotland. Imported and exhibited by John A. Boag & Son, Queensville; sire, Ascot [3942] (10494); dam, Rose o' the Mill [14568] (18095), by Royal Standard [4020] (9847).

9th—Imperialist Junior (imp.) [8768] (14169), bay, face and legs white, foaled March 28th, 1905. Bred by Grant & Douglas, Balliemore, Nethybridge, Scotland. Imported and exhibited by Neil Smith, Brampton, Ontario; Sire, Imperialist [7687] (11376); dam, Lady Anne [16434] (16108), by Scottish Prince (9673).

Clydesdale Stallions foaled in 1906.

1st—Top Spot (imp.) [7795] (13848), bay, white face, hind legs and near forefoot white, foaled May 25th, 1906. Bred by A. & W. Kerr, Old Graitney, Gretna, Scotland. Imported and exhibited by Graham, Renfrew & Co., Limited, Bedford Park, Ontario; sire, Baron Hood [6137] (11260); dam, Lady Stormont [13886] (16157), by Darney Again (9182).

2nd—Dunure Nikko (imp.) [8792] (14102), bay, white, face, four white legs, foaled May, 1906. Bred by Daniel Henderson, Netherton, Langbank, Renfrewshire, Scotland. Imported and exhibited by T. H. Hassard, Markham, Ontario; sire, Hiawatha [3430] (10067); dam, Nellie 2nd of Netherton [15997] (15082), by Prince of Albion [2895] (6178).

3rd—Dunure Pebble (imp.) [8461] (14104), brown, foaled 1906. Bred by T. J. Gardiner. Exhibited by Smith & Richardson, Columbus, Ontario; sire, Baron o' Buchlyvie [5353] (11263); dam, Lily of Banchory [15740] (17662), by Marcellus [4683] (11110).

4th—Dunure Robert (imp.) [8020] (13370), bay, foaled 1906. Bred by Wm. Dunlop. Exhibited by T. H. Hassard, Markham, Ontario; sire, Montrave Mac [3087] (9958); dam, Montrave Minosa [14901] (17582), by Montrave Ronald [5328] (11121).

5th—Prince Ascot (imp.) [8458] (14485), black, foaled 1906. Bred by A. R. Johnston. Exhibited by Smith & Richardson, Columbus, Ontario; sire, Ascot [3942] (10494); dam, Mag of Lockwood [15739] (16773), by Prince of Princes [7096] (9088).

6th—Timothy (imp.) [6811] (13852), bay, face, near fore and hind legs white, foaled June, 1906. Bred by James McAdam, Slogarrie Mains, New Galloway Station, Scotland. Imported and exhibited by John A. Boag & Son, Queensville, Ontario; sire, Benedict [3604] (10315); dam, Slogarrie Pearl [14576] (14671), by Prince Robert [2891] (7135).

7th—Gay Sprig (imp.) [7794] (13849), bay, foaled 1906. Bred by Robert Dick. Exhibited by W. J. Cowan, Cannington, Ontario; sire, Refiner [5418] (12301); dam, Lady Favorite [13882] (17552), by Royal Favorite [4052] (10630).

8th—Abbots Hall (imp.) [8736] (13947), brown, white hair through coat, stripe, hind legs white, fore legs gray, foaled May 15th, 1906. Bred by Wm. Cummings, Dogton, Kinglassie, Fifeshire, Scotland. Imported and exhibited by T. D. Elliott, Bolton, Ontario; sire, Montrave Merman [8735] (11437); dam, Dogton Lady [16377] (20987) by Prince Harold [4492] (9973).

9th—Dunure Allan (imp.) [8456] (14487), brown, face and legs white, foaled May 22nd, 1906. Bred by Wm. Dunlop, Dunure Mains, Ayr, Scotland. Imported and exhibited by Smith & Richardson, Columbus, Ontario; sire, Dunure Freeman [7067] (11693); dam, Mayflower [15737] (15317), by Lord Lothian [3513] (5998).

Clydesdale Stallions foaled in 1907.

1st—Dunure Wallace (imp.) [8455] (14488), bay, foaled 1907. Bred by Wm. Dunlop. Exhibited by Smith & Richardson, Columbus, Ontario; sire, Baron o'Buchlyvie [5353] (11263); dam, Dunure Anna [15736] (16645), by Montrave Mac [3087] (9958).

2nd—Huntly Pride (imp.) [8460] (14483), brown, foaled 1907. Bred by Chas. Smith. Exhibited by Smith & Richardson, Columbus, Ontario; sire, Ruby Pride [7201] (12344); dam, Rosabella [6930] (12921), by Lord Montrose [3568] (7973).

3rd—Lord Banchory (imp.) [8441] (14478), bay, face and near hind ankle white, foaled April 20th, 1907. Bred by James Leask, Mains of Glenfarquhar, Auchinblae, Fordoun, Scotland. Imported and exhibited by J. M. Gardhouse, Weston, Ontario; sire, Netherlie [8324] (12260); dam, Lorna Doon [15701] (15122), by Bounding Boy [8442] (10172).

4th—Captain Kettle (imp.) [8747] (14540), bay, star, near fore ankle and hind legs white, foaled May, 1907. Bred by A. W. Saunders, Dromore Farm, Kircudbright, Scotland. Imported and exhibited by T. D. Elliott, Bolton, Ontario; sire, Ascot [3942] (10494); dam, Trilby of Kowle [16394] (20889), by Darnely's Hero [7997] (5697).

Clydesdale Mares foaled Previous to January 1st, 1906.

1st—Maid of Athens (imp.) [15708] (20834), light brown, stripe, three legs white, one leg dark, foaled June 5th, 1905. Bred by Mrs. Sarah Gillies, Quochag, Rothesay, Bute, Scotland. Imported and exhibited by Graham Bros., Claremont; sire, Royal Blend [6041] (11893); dam, Sally of Quochag [15711] (17675), by Prince Rosemount [5345] (9992).

2nd—Floshend Princess (imp.) [13788] (18613), bay, white on face and legs, foaled May, 1904. Bred by James Crawford, Floshend, Gretna, Scotland. Imported and exhibited by Smith & Richardson, Columbus, Ontario; sire, Prince Tom [4145] (11149); dam, Lily of Flosh [13816] (18614), by Williamwood [3939] (8391).

3rd—Crosby Gem (imp.) [13867] (18570), bay, foaled 1905. Bred by Wm. Threlfell. Exhibited by W. J. Cowan, Cannington, Ontario; sire, Baron's Fashion [6247] (10973); dam, Jess of Crosby [13869] (18571) by Baldarie Chief [6305] (10025).

Clydesdale Mares foaled in 1906.

1st—Queen of the Waves (imp.) [15710] (20835), bay, face and legs white, foaled May 19th, 1906. Bred by John Cooper, Ley, Banchory, Scotland. Imported and exhibited by Graham Bros., Claremont, Ontario; sire, Netherlea [8324] (12260); dam, Mary of Ley [15720] (17485), by Gay City [7374] (10194).

2nd—Bishopton Queen (imp.) [14072] (18596), bay, stripe, near fore and near hind ankles white, foaled May, 1906 Bred by John Currie, Bishopton, Kircudbright, Scotland. Exhibited by Hodkinson & Tisdale, Beaverton, Ontario; sire, Prince Sturdy [2881] (10112); dam, Maggie [14402] (18597), by Baron's Pride [3067] (9122).

3rd—Craigie Beauty (imp.) [14804] (18742), brown, stripe, four white legs, foaled May, 1906. Bred by Alex. Anderson, Berryhill, Dundee, Scotland. Imported and exhibited by T. D. Elliott, Bolton, Ontario; sire, Royal Blend [6041] (11893); dam, Black Beauty [14813] (16471), by Crown and Feather [4643] (8559).

4th—Rose Campbell (imp.) [14566] (18582), bay, white face and four white legs, foaled 1906. Bred. by John Campbell, Slagnaw, Castle Douglas, Scotland. Imported and exhibited by John A. Boag & Son, Queensville, Ontario; sire, Benedict [3664] (10315); dam, Bell of Auldbrick [14574] (18581), by King of the Roses [3493] (9927).

Clydesdale Mares foaled on or subsequent to January 1st, 1907.

1st—White Heather [14617], bay, face and off hind leg white, foaled June 1st, 1907. Bred and exhibited by A. G. Gormley, Unionville, Ontario; sire, Fullarton (imp.) [2370] (9910); dam, Miss Todd (imp.) [4785] (Vol. 25, page 85, S.), by King's Cross [3153] (10070).

2nd—Lady Baronson (imp.) [15707] (20833), brown, white face, four white legs, foaled May 26th, 1907. Bred by James Dick, Ballinton, Kippen Station, Stirlingshire, Scotland. Imported and exhibited by Graham Bros., Claremont, Ontario; sire, Baronson [5347] (10981); dam, Rosie of Ballinton [15716] (19371), by Royal Gartly [2859] (9844).

Canadian Bred Clydesdale and Shire Stallions, foaled previous to January 1st, 1906.

1st—Independence [5731], bay, stripe, hind feet white, foaled July 4th, 1905. Bred and exhibited by A. G. Gormley, Unionville, Ontario; sire, Fullarton (imp.) [2370] (9910); dam, Madge of Hallcroft (imp.) [4776], by Ornament [3421] (10603).

2nd—Golden Chief [8390], chestnut, ratch, hind legs white, foaled July 2, 1905. Bred by Fred. Hanson, Mitchell, Ontario. Owned and exhibited by P. Herold, V.S., Tavistock, Ontario; sire, Bay Chief [2955] 9979; dam, Jessie Hanson (15587), by Craigiever (imp.) [1330] (6639).

3rd—Golden Conqueror [4251], chestnut, white face and feet, foaled July 27th, 1902. Bred by A. Doherty, Ellesmere, Ontario. Exhibited by Joseph E. Teeson, Thornhill, Ontario; sire, Cloth of Gold [2959] 8962; dam, Daisy Bell [2596], by Bruce (imp.) [1595] (8496).

4th—MacKenzie [4798], bay, stripe, white legs, foaled May 22nd, 1904. Bred and exhibited by Hodgkinson & Tisdale, Beaverton, Ontario; sire, Foremost (imp.) [3364] (11339); dam, Royal Princess [2345], by The Royal Standard (imp.) 2220 (10014).

5th—MacQueen's Champion [5372], bay, star and snip, fore foot and hind leg white, foaled July 7th, 1904. Bred and exhibited by Crawford Bros., Brown's Corners, Ontario; sire, Alexander Macqueen [3291]; dam, Bessie of Upper Springs [4399], by the Granite City (imp.) [709] (5397).

Canadian Bred Clydesdale and Shire Stallions foaled in 1906.

1st—Hedgyn Cornerstone [6451), bay, stripe, nigh forefoot and off hind fetlock white, foaled August 10th, 1906. Bred and exhibited by Chas. Groat, Brooklin, Ont.; sire, Cornerstone (imp.) [3505] (11016); dam, Polly Newday [3026], by Newday (imp.) [1912] (8076).

2nd—Dunrobin Baron [6030], light bay, blaze off fore pastern and hind legs white, foaled May 10th, 1906. Bred and exhibited by Donald Gunn & Son, Beaverton, Ont.; sire, Royal Baron (imp.) [4722] (11161); dam, Jessie Keir 3694, by Lord Lynedoch (imp.) [3004] (4530).

3rd—Sandy Macqueen [6866], bay, face and legs white, foaled July 25th, 1906. Bred and exhibited by John W. Cowie & Son, Markham, Ontario; sire, Alexander Macqueen [3291]; dam, Fanny Redmond [2530], by Brown James (imp.) [731] (5595).

4th—Sandy Montgomery [7700], bay, white face, four white legs, foaled May 21st, 1906. Bred and exhibited by T. A. Wood, Bradford, Ontario; sire, Harmony (imp.) [2951] (10772); dam, Maud Macindoe [5157], by Macindoe (imp.) [538] 7418 (6040).

5th—Souter Jonnie [8016], bay, spot on face, hind legs white, foaled June 18th, 1906. Bred and exhibited by Robert Martin, Wexford, Ontario; sire, Hopewell (imp.) [3377] (11375); dam, Dolly of Aberfoyle [14891], by Plain Boy (imp.) [698] (6141).

6th—Sweet William [6856], foaled in 1906. Exhibited by Alexander Doherty, Ellesmere, Ontario; sire, Right Forward (imp.) [4363] (12310); dam, Sweetheart [5393], by Prince of Blantyre [2239].

7th—Charlie Currah [8200], light bay, face and hind legs white, foaled April 12th, 1906. Owned and exhibited by H. P. Mason, Scarboro', Ontario; sire, Prince of Currah (imp.) [2952] (8916); dam, Rosie Grove [4830], by Janitor (imp.) [2433] (10206).

Canadian Bred Clydesdale and Shire Stallions foaled on or subsequent to January 1st, 1907.

1st—Royal Albane [8366), bay, face and feet white, foaled May 7th, 1907. Exhibited by Thomas Mercer, Markdale, Ontario; sire, Breadalbane (imp.) [4558] (11637); dam, Royal Princess (imp.) [5209], by Royal Carrick [3533] (10270).

2nd—Hurlford [16549], bay, stripe, hind legs white, foaled June 3rd, 1907. Owned and exhibited by Smith & Richardson, Columbus, Ontario; sire, Holstane Chief (imp.) [4254] (12177); dam, Fashion Belle (imp.) [14232], by Locomotion [3975] (11091).

3rd—Baron's Charm [8814], bright bay, stripe, little white on near fore foot, hind legs white, foaled June 16th, 1907. Exhibited by C. B. Gibson, Arthur, Ontario; sire, Baron's Heir (imp.) [5037] (11605); dam, Queenie [4376], by MacClinker (imp.) [2223] (6762).

4th—Gartly's Pride [8813], bay, white face, hind legs and near fore leg white, foaled April 27th, 1907. Bred and exhibited by John Wiggins, Guthrie, Ontario; sire, Baron Gartly [4789] (11601); dam, Biddy [3404], by Toftys Superior [2252].

5th—Baron Chief [6870], brown, star and snip, off fore fetlock and hind legs white, foaled May 12th, 1907. Bred and exhibited by Arch. Coulson, O'Sullivan's Corners, Ontario; sire, Baron Currie (imp.) [7734] (12445); dam, Lady May [12159], by Honour Bound (imp.) [2115] (8700).

6th—Balgray Baron [8824], black face, off fore foot and hind legs white, foaled May 11th, 1907. Owned and exhibited by George Jardine, Bond Head, Ontario; sire, Celtic Baron (imp.) [5415] (12894); dam, Mag Harmony [16534], by Harmony (imp.) [2957] (10772).

7th—Roy Macqueen [8433], bay, star, near fore and hind feet white, foaled April 9th, 1907. Bred and exhibited by J. S. Beare, Cedar Grove, Ontario; sire, Macqueen (imp.) [462] (5200); dam, Brown Polly [10510], by Red Wallie (imp.) [2287] (8183).

Canadian Bred Clydesdale and Shire Mares foaled previous to January 1st, 1906.

1st—Belle Rose [4798], bay, stripe, white ankles, foaled January, 1903. Bred by R. Davies, Toronto, Ontario. Owned and exhibited by the Graham, Renfrew Co., Limited Bedford Park, Ontario; sire, Lyon Macgregor (imp.) [2308] (10376); dam, Princess Belle [2281], by Prince of Quality [2173] (5648).

2nd—Lynedock Queen [5382], light bay, face and hind feet white, foaled April 10th, 1903. Bred by Wm. Wilson, Oshawa, Ontario. Exhibited by The Dominion Transport Company, Toronto, Ontario; sire, Lord Lynedock (imp.) [3004] (4530); dam, Flow [3475], by Macneilage (imp.) [1117] (2992).

3rd—Burndennete Beauty [8573], bay, face, off fore and hind legs white, white spot on belly, foaled May 24th, 1905. Bred and exhibited by A. G. Gormley, Unionville, Ontario; sire, Hopewell (imp.) [3377] (11375); dam, Beauty (imp.) [4784], by Ornament [3421] (10603).

4th—Queenie [4376], bay, stripe, hind feet white, foaled June 6th, 1898. Owned and exhibited by C. A. Towers, River Bank, Ontario; sire, MacClinker (imp.) [2223] (6762).

5th—Jessie of Woodlane [8654], bay, face and hind legs white, foaled May 31st, 1904. Bred by J. J. Marshall, Pine Grove, Ontario. Exhibited by Jas. Neal, Woodbridge, Ontario; sire, Laird of Argo (imp.) 3343 (11776); dam, Maud, 2263, by Macneilage (imp.) [1117] (2992).

Canadian Bred Clydesdale and Shire Mares foaled in 1906.

1st—Barron's Queen [12985], bay, stripe, near fore ankle and hind legs white, foaled May 28th, 1906. Bred by Angus Ross, Beaverton, Ontario. Exhibited by Hodgkinson & Tisdale, Beaverton; sire, Royal Baron (imp.) [4722] (11161); dam, Peeress (imp.) [6658] (Vol. 25, page 42, S.), by Royal Peer [5049] (11175).

2nd—Lady Glenlivet [14333], bay, stripe, four white feet, foaled July 20th, 1906. Bred by Jno. Oke, Courtice, Ontario. Exhibited by Smith & Richardson, Columbus, Ontario; sire, Glenlivet (imp.) [4787] (12165); dam, Fanny Courtice [9969], by Sir Walter (imp.) [1131] (8272).

3rd—Nellie Blythe [11762], brown, stripe, hind legs white, foaled June 23, 1906. Bred and exhibited by Arch. Coulson, O'Sullivan's Corners, Ontario; sire, Baron Currie (imp.) [7734] (12445); dam, Gipsy (bred by A. Coulson), by Pride of Perth (imp.) [282] (2336).

4th—Royal Daisy [12599], light bay, stripe, one hind and one fore leg, and one hind and one fore pastern white, foaled April 30th, 1906. Bred and exhibited by Wm. Wagester, Tavistock, Ontario; sire, Royal Sovereign [5823] (11508); dam, May Queen, by Machardy (imp.) [5655] (8004).

Canadian Bred Clydesdale and Shire Mares, foaled on or subsequent to January 1st, 1907.

1st—May Queen [16416], bay, stripe, four white feet, foaled May 16, 1907. Bred and exhibited by Jno. Graham, Derry West, Ontario; sire, Brogie Stamp (imp.) [4168] (11278); dam, Nancy Hurworth [4173], by Hurworth (imp.) [2490] (5086).

2nd—Lockwood Queen [16418], bay, stripe, under lip white, four white legs, foaled May 26, 1907. Bred and exhibited by Jno. Johnston, Woodbridge, Ontario; sire, Brogie Stamp (imp.) [4168] (11278); dam, Montrave Princess [4385], by Montrave Chief (imp.) [537] (5222).

Shire Stallions, foaled previous to January 1st, 1906.

1st—Newham Duke (imp.) [343] (19893), brown, star in forehead, near hind stocking white, foaled 1899. Bred by F. W. Danger, Newnham Grange, England. Exhibited by J. M. Gardhouse, Weston; sire, Catthorpe Irving (14555); dam, Blossom (27624), by Warwickshire Hero 3rd (15418).

2nd—Royal King 3rd (imp.) [530] (24580), brown, foaled 1904. Bred by R. Moore & Sons, Nottingham, England. Exhibited by John Gardhouse & Sons, Highfield, Ontario; sire, Calwich Legatee (21240); dam, Nottingham Eva (39788), by Menie Andrew (18298).

3rd—Duke of Clarence 10th (imp.) [496] (23257), black brown, white stocking on off hind leg, little white on near hind fetlock, foaled 1902. Bred by H. H. Parry, Glanrafon, Llanerchymedd, Anglesey. Imported and exhibited by Wm. Laking, Haliburton, Ontario; sire, Duke of Clarence 2nd (13001); dam, Gwyndy Queen (48104), by Carbon (3523).

4th—Victor [422], dark bay, face and off hind leg white, foaled 1904. Bred by Morris & Wellington, Fonthill, Ontario. Exhibited by Wm. Laking, Haliburton, Ont.; sire, Coronation 3rd (imp.) [354] (20377); dam, Rose [145], by Pride of Hatfield (imp.) [256] (13103).

Shire Stallions, foaled in 1907.

1st—Solitaire [518], bay, face and three ankles white, foaled May 25th, 1907. Bred and exhibited by Arthur Clarke, Alloa, Ontario; sire, Nateby King 3rd (imp.) [420] (23537); dam, Black Jewel (imp.) [236] (50267), by Tartar 2nd (15385).

Shire Mares, foaled Previous to January 1st, 1906.

1st—Black Jewel (imp.) [236] (50267), black, stripe in face, three white legs, foaled 1902. Bred by Wm. Hall, Westfield, Garstang, England. Exhibited by A. G. Clarke, Alloa, Ontario; sire, Tartar 2nd (15385); dam, Daisy, by Cardinal (2407).

2nd—Bluebell (imp.) [280] (50343), blue roan, star, hind legs white, foaled 1903. Bred by Edward Kirkham, Billsboro, Preston, England. Imported by Morris & Wel-

lington, Fonthill, Ontario. Owned and exhibited by Wm. Laking, Haliburton, Ont.; sire, Horbling Harold (15647); dam, Chestnut mare, by Gunthorpe Advance (13136).

3rd—Lady Luetta [192]. foaled May, 1903, bay, star, hind ankles white. Bred by Morris & Wellington, Fonthill, Ontario. Owned and exhibited by J. M. Gardhouse, Weston, Ontario; sire, Mars (imp.) 275 (17103); dam, Louise [172], by Pride of Hatfield (imp.) [256] (13103).

4th—Holdenby Nicausis (imp.) [276] (Vol. 28 E.), brown, white star, white hairs on nip and nose, both hind socks white, foaled 1904. Bred by John Chambers & Sons, Holdenby, Northampton, England. Exhibited by J. Gardhouse & Sons, Highfield, Ontario; sire, Northgate Prince (15762); dam, Nicausis (imp.) [247] (33270), by Vulcan, of Worsley 5th (12601).

5th—Duchess of Holdenby (imp.) [242] (47810), brown, white blaze, fore feet and hind legs white, foaled 1903. Bred by John Chambers & Sons, Holdenby, Northampton, England. Owned and exhibited by Wm. Laking, Haliburton, Ontario; sire, Duke of Anglesey (19555); dam, Cymraes (31548), by Royalist (2448).

Shire Mares, foaled on or Subsequent to January 1st, 1906.

1st—Black Maud [307], black, foaled May 1st, 1906. Bred and exhibited by John Gardhouse & Sons, Highfield, Ontario; sire, Coleshill Royal Albert (imp.) [383] (20367); dam, Black Bess [210], by Darnley (imp.) [183] (3585).

Hackney Stallions 15 hands, 2 inches and over, Foaled Previous to January 1st, 1906.

1st—Colorito (imp.) —333—(8796), chestnut, foaled 1902. Bred by H. G. Stacey, Leeds, England. Imported and exhibited by Graham Bros., Claremont, Ontario; sire, Rosador (4964); dam (11525), Syringa, by Agility (2799).

2nd—Linden Renown (imp.)—331—(8545), bay, near hind foot white, foaled 1901. Bred by Thos. Wing, March, Cambs, England. Exhibited by Hodgkinson & Tisdale, Beaverton, Ontario; sire, Danegelt's Son (6236); dam, (6109) Rosy Pink, by Renown (1887).

3rd—Atwick Astonishment (imp.)—417—(9101), chestnut, face, fore legs and off hind leg white, foaled 1904. Bred by Geo. Mason Gale, Atwick, Seaton, Hull, England. Imported and exhibited by T. H. Hassard, Markham, Ontario; sire, Atwick Jubilee (7689); dam, (4146) Lady Mary of Atwick, by Danegelt (174).

4th—Glenfarg (imp.)—404—(8490), brown, foaled 1901. Bred by Jas. McArthur. Exhibited by Dalgety Bros., London, Ontario; sire, Moncrieffe Statesman (7192); dam, (6834) Lady Agnes, by Pearlfinder.

Hackney Stallions under 15. 2; Foaled Previous to January 1st, 1906.

1st—Copmanthorpe, Swell (imp.)—325—(9535), chestnut, stripe, hoof heads in front white, foaled 1903. Bred by Robt. S. Hall, Langton, Malton, Yorks, England. Imported and exhibited by Graham-Renfrew Co., Bedford Park, Ontario; sire, Garton Duke of Connaught (3009), dam (15945) Lady Hortop, by Pioneer (1088).

2nd—Derwent Performer 8823, foaled 1903, chestnut, star, snip on nose, white near hind fetlock and off fore coronet. Bred by J. Burton & Son, Gallow House, Wath, Helmerby, S. O. Yorks. Exhibited by G. H. Pickering, Brampton, Ontario; sire Rosedaor 4964, dam 13416, Dorothy Derwent.

3rd—Blanche Surprise (imp.)—368—(8745) dark chestnut, white face four white legs, foaled 1903. Bred by John Beal, North Dalton Driffield, England. Imported and exhibited by John A. Boag & Son, Queensville, Ontario; sire, Rosador (4964), dam (15634) Blanche Primrose, by Garton Duke of Connaught (3009).

4th—Flat Top Swell (imp.)—306—(8474), chestnut, 15.1, foaled 1902. Bred by Jno. Braithwaite. Exhibited by T. H. Hassard, Markham, Ontario; sire, Foxholes Swell (7448), dam (7299) Princess May.

5th—Helbeck (imp.)—470—(9268), bay, black points, foaled 1901. Bred by Alex. Morton, Cowanbank, Garvel, Scotland. Imported and exhibited by T. H. Hassard, Markham, Ontario; sire, Ruby [1342], dam, Duchess Derby 3713, by Cadet 1251.

Hackney Stallions, Foaled in 1906.

1st—Langton's Colonel—986—. Exhibited by T. A. Cox, Brantford.

Standard Bred Stallions, Foaled Previous to January 1st, 1906.

1st—Mograzia, 42010, bay, foaled 1903. Bred by O. J. Phelps. Exhibited by Miss K. L. Wilks, Galt, Ontario; sire, Moko, 24457; dam, Congrazia, by Antevolo.

2nd—Arley A., 36329, bay, foaled 1900. Exhibited by Crow & Murray, Toronto; sire, Westbrook, 7501; dam, Jenny McGregor, by McGregor Boy, 2696.

3rd—Grand Allerton, 69437, chestnut. Bred by C. W. Williams, Galesburg, Ill. Owned and exhibited by Hales Bros., Chatham, Ontario; sire, Allerton, 5128; dam, Dawn, by Egmont, 1828.

4th—Imperial, Jr., 1189, 47510 (A.T.R.), brown, foaled March 12, 1905. Exhibited by Fred Garbutt, Toronto Junction; sire, Wilfred Cecil, 34839; dam, Pall Mall, by Gimcrack, 3924.

5th—Bingen Pilot, 40027, bay, foaled 1902. Bred by D. D. Streeter. Exhibited by Miss K. L. Wilks, Galt, Ontario; sire, Bingen, 29567; dam, Kahla Belle, by Pilot Medium, 1597.

6th—Jud Posey, 42479, bay, foaled May 4, 1904. Bred by J. G. Sherman. Exhibited by Tilt & Ross, Derry West, Ontario; sire, Baron Posey, 11725; dam, Honey Sweet, by Virginius, 8146 (A.T.R.)

7th—Good Timber, 35606, foaled 1898. Exhibited by Crow & Murray, Yonge St., Toronto; sire, Big Timber, 29471; dam, Laura P., by Shadeland Onward.

Standard Bred Stallions, Foaled on or Subsequent to January 1st, 1906.

1st—Ormondo, bay, foaled 1906. Bred and exhibited by Miss K. L. Wilks, Galt, Ontario; sire, Oro Wilks; dam, Grismonda.

Standard Bred Mares, Foaled on or Subsequent to January 1st, 1906.

1st—Okom Belle, brown, foaled 1906. Bred and exhibited by Miss K. L. Wilks, Galt, Ontario; sire, Moko, 24457; dam, Congrazia, by Antevolo.

2nd—Vanity Oro, grey. Bred and exhibited by Miss K. L. Wilks, Galt, Ontario; sire, Oro Wilks; dam, Vanity W.

3rd—Woodbine Posey, 73283, bay, foaled 1907. Bred and exhibited by Waldie Steen, Derry West, Ontario; sire, Jud Posey, 42479; dam, Woodbine Fancy, 57480.

Thoroughbred Stallions, Foaled Previous to January 1st, 1906.

1st—Buccleuch (imp.)—134—(Vol. 20, p. 614 E.), brown, foaled 1901. Bred by Lord Polworth, Mertoun House, St. Boswell's, Scotland. Imported and exhibited by T. D. Elliott, Bolton, Ontario; sire, Balsamo; dam, Nightlight, by Knight of the Launol.

2nd—Halfing (imp.) (172), brown, foaled 1892. Exhibited by Paterson Bros., East Toronto, Ontario; sire, Macheath; dam, Moiety, by Charibert.

3rd—St. Basset, 47368, bay, foaled March 26th, 1905. Bred by J. B. Haggin. Exhibited by Jas. Bovaird, Brampton, Ontario; sire, Bassetlam; dam, Berridge, by Artillery (imp.)

4th—Millner, 99 (133), foaled 1892. Exhibited by Crow & Murray, Yonge St., Toronto; sire, St. Simon; dam, Marquesa.

5th—Kapanga Horse, chestnut, aged. Exhibited by Messrs. M. A. & J. G. Barbour, Toronto; sire, Spendthrift (imp.); dam, Kapanga (imp.)

Thoroughbred Stallions, Foaled Previous to January 1st, 1906.

1st—Northern Lights, 57145, bay, foaled 1907. Exhibited by Doane Bros., Yonge St., Toronto; sire, Star Shoot (imp.); dam, Cold Wave.

2nd—Lou Corval, 54277, dark chestnut, foaled April 2, 1907. Owned and exhibited by W. J. Stinson, High Park, Ontario; sire, Cormorant; dam, Lassie Lou, by Head Lad.

Thoroughbred Mares, Foaled on or Subsequent to January 1st, 1906.

1st—Ethelbert, 56155, chestnut, foaled 1907. Exhibited by Crow & Murray, Toronto, Ontario; sire, Ethelbert; dam, Orletta.

2nd Mrs. Siddons, 49001, foaled January 27, 1906. Exhibited by James Bovaird, Brampton, Ontario; sire, David Garrick; dam, Violet S., by Emperor.

Shetland Pony Stallions, Any Age.

1st—Goldfinder—Vol. 15—black. Exhibited by Frank Gillies, Toronto.

Shetland Pony Mares, Any Age.

1st—Tiny Kitt. Exhibited by T. A. Cox, Brantford, Ontario.

Pony Stallions any age, any breed other than Shetland, 14 hands, 1 inch and under.

1st—Plymouth Horace (imp.)—305—(8969) (Hackney), bay, foaled 1903. Bred by Sir Gilbert Greenall, Walton Hall, England. Exhibited by Graham, Renfrew Co., Limited, Bedford Park, Ontario; sire, Sir Horace (5402); dam, (4117) Lady Kate.

2nd—Royal Review (imp.) (10033) (Hackney). Exhibited by T. H. Hassard, Markham, Ontario.

3rd—Bathgate Swell (imp.)—330—(8731), dark brown, foaled 1903. Bred by Fred Jackson, Woodlands, Garstang, England. Imported and exhibited by Graham, Renfrew Co., Limited, Bedford Park, Ontario; sire, Woodlands Eaglet (8339); dam, (14075) Woodlands Buttercup, by Sir Christopher (4504).

Pony Mares, Any Age, Any Breed Other than Shetland, 14 hands, 1 inch and Under.

1st—Berkly Swell, bay, foaled. Exhibited by T. A. Cox, Brantford, Ontario; sire, Berkly Royal, 8375; dam, Berkly Elegance, 1867.

2nd—Ladysmith, chestnut, 6 years old. Exhibited by J. M. Gardhouse, Weston.

3rd—Lorena, dark bay, black points, foaled June, 1905. Exhibited by J. F. Elliott, Oxford Centre, Ontario.

4th—Lady Grey, grey. Exhibited by R. M. Jenkins, Todmorden, Ontario.

Heavy Draught Geldings, or Mares, shown in Single Harness, three years old and over, to be Sired by Either a Registered Clydesdale or Shire Stallion. Registered Name and Number of Sire to be Given with Entry.

1st—Sir George, gelding. Exhibited by Dom. Transport Co., Limited, Toronto; sire, Black Benedict (imp.) [3563] (11275).

2nd—Charlie, bay gelding, three white legs and star in face, foaled 1905. Exhibited by J. W. Cowie & Son, Markham, Ontario; sire, Gallant Chattan (imp.) [4223] (12153).

3rd—Gipsy 7901, bay, face and legs white, foaled June 15, 1904. Exhibited by J. W. Cowie & Son, Markham, Ontario; sire, Ascot, [3942] (10494).

4th—Dougald, gelding, brown. Exhibited by D. A. Murray, Bennington, Ontario; sire, Gartsherrie Blend (imp.) [4096] (10351).

5th—Sir Charles, gelding. Exhibited by Dominion Transport Co., Limited., Toronto; sire, Santiago (imp.) [2472] (10901).

6th—Pride, gelding, dark bay. Exhibited by D. A. Murray, Bennington, Ont.; sire, Huron's Pride [1836].

7th—Bob, bay gelding. Exhibited by Jos. Russell, M.P., Toronto; sire, Granite [1913].

Single Horses, Geldings or Mares, Shown on a Line, Bred in Canada, and the Property of Persons Actually Engaged in Farming or Agricultural Pursuits only, and Owned by the Exhibitor Previous to January 1st, 1909. To be Sired by a Registered Clydesdale or Shire Stallion Registered name and number of Sire to be given with Entry.

1st—Charlie. Exhibited by J. W. Cowie & Son, Markham, Ontario; sire, Gallant Chattan (imp.) [4223] (12153).

2nd—Sandy. Exhibited by J. A. Boag & Son, Queensville, Ontario; sire, Lord Hastings (imp.) (4635).

3rd—Dougald. Exhibited by D. A. Murray, Bennington, Ontario; sire, Gartsherrie Blend (imp.) [4096] (10351).

4th—Pride. Exhibited by D. A. Murray, Bennington, Ontario; sire, Huron's Pride [1836].

5th—Glen Forward. Exhibited by Alex. Doherty, Ellesmere, Ontario; sire, Right Forward [4363] (12310).

6th—Jake Scott. Exhibited by Alex. Doherty, Ellesmere, Ontario; sire, Hopewell [3377] (11375).

Heavy Draught Team, in Harness, Geldings or Mares to be Sired by a Registered Clydesdale or Shire Stallion. Registered Names and Number of Sire to be Given with Entry.

1st—Charlie, bay, gelding; sire, Gallant Cattan (imp.) [4223] (12153) Gipsy, bay; sire, Ascot [3942] (10494). Exhibited by J. W. Cowie & Son, Markham, Ontario.

2nd—Dougald, gelding; sire, Gartsherrie Blend (imp.) [4096] (10351) Pride, gelding; sire, Huron's Pride [1836]. Exhibited by D. A. Murray, Bennington, Ontario.

3rd—Glen Forward, 3 years old; sire, Right Forward [4363] (12310). Jake Scott, 4 years old; sire, Hopewell [3377] (11375). Exhibited by Alex. Doherty, Ellesmere, Ontario.

4th—Bob, bay gelding; sire, Granite [1913] Bill, sire, Prince of Currah [2925] (8916). Exhibited by Joseph Russell, M.P., Toronto.

CHAMPIONSHIPS.

Clydesdale Stallion, Any Age.

1st—Sir Marcus (imp.) [7790] (13205). Exhibited by Graham Bros., Claremont, Ontario.

Clydesdale Mare, Any Age.

1st—Bell Rose [4798], bay foaled January, 1903. Exhibited by The Graham, Renfrew Co., Bedford Park, Ontario.

Canadian Bred Clydesdale or Shire Stallion, Any Age.

1st—Royal Albane [8366), bay, foaled May 7, 1907. Exhibited by Thos. Mercer, Markdale.

Canadian Bred Clydesdale or Shire Mare, Any Age.

1st—Bell Rose [4798], bay, foaled January, 1903. Exhibited by The Graham Renfrew Co., Bedford Park, Ontario.

Shire Stallion, Any Age.

1st—Newnham Duke (imp.) 343 19893, brown, foaled 1899. Exhibited by J. M. Gardhouse, Weston, Ontario.

Shire Mare, Any Age.

1st—Black Jewel (imp.) 236 (50267), black, foaled 1902. Exhibited by A. G. Clark, Alloa, Ontario.

Hackney Stallion, Any Age.

1st—Colorito (imp.)—333—(8796), chestnut, foaled 1902. Exhibited by Graham Bros., Claremont Ontario.

Standard Bred Stallion, Any Age.

1st—Mograzia, 42010, bay, foaled 1903. Exhibited by Miss K. L. Wilks, Galt, Ontario.

Thoroughbred Stallion, Any Age.

1st—Buccleuch (imp.)—134—brown, foaled 1901. Exhibited by T. D. Elliott, Bolton, Ontario.

Pony Stallion, Any Age.

1st—Plymouth Horace (imp.)—305—(8969) (Hackney), bay, foaled 1903. Exhibited by the Graham, Renfrew Co., Limited, Bedford Park, Ontario.

Pony Mare, Any Age.

1st—Berkly Swell, bay. Exhibited by T. A. Cox, Brantford, Ontario.

APPENDIX.

ONTARIO PROVINCIAL WINTER FAIR.

HELD AT GUELPH, DECEMBER 7th to 11th, 1908.

LIST OF PRIZE WINNERS.

CATTLE.

SHORTHORNS.

Steer, 2 years and under 3. Two entries.

1st—John Barr, Blyth. Royal, Oct. 12, 1905. Sire, Silver Plate, 40203; dam, Lady Sylvia, 42084.
2nd—John Brown & Son, Galt. Sept. 15, 1905. Sire, Dunlop, 52405; dam, Red Rose, Vol. XVII.

Steer, 1 year and under 2. Four entries.

1st—John Brown & Sons. White Hero, Dec. 2nd, 1906. Sire, Scottish Hero (Imp) 55042; dam, Matchless of Mapleton 2nd, 53648.
2nd—W. A. Douglas, Tuscarora. White King. Sire, Rosicrucian of Dalmeny, (Imp) 45220 (82117); dam, Clara's Gem, 50339.
3rd—Robt. Talbot, Everton. Crimson Chief, Feb. 7th. Sire, Crimson Ribbon, 40918; dam, Lady Pink, 30935.
4th—John Barr. Blyth Boy, No. 2. Sire, Silver Plate, 40203; dam, Jennet, 37404.

Steer, under 1 year. Six entries.

1st—Donald Gunn & Son, Beaverton. Dunrobin Villager, Sept. 2nd, 1907. Sire, Nonpariel Eclipse, 55704; dam, Village Queen 5th, 64829.
2nd—H. Smith, Exeter. Silver Nugget, Sept. 22nd, 1907. Sire, Gold Drop, 43723; dam, Queen Bess 36th, 70182.
3rd—J. Watt & Son, Salem. White Heather, Sept. 30, 1907. Sire, Heatherman, 59153; dam, Lady English 7th, 17951.
4th—Peter Stewart, Everton, Roan Lad, Sept. 7, 1907. Sire, Imperial Beau, 61726; dam, Lady Aberdeen, 58610.
5th—John Currie, Eramosa. Red Prince, Dec. 23, 1907. Sire, Senator Loree, 65506; dam, Aurelia 3rd, 50907.

Cow or Heifer, 3 years or over. Five entries.

1st—Geo. B. Armstrong, Teeswater. Bowhill English Lady 6th, 77420. Jan. 31st, 1905. Sire, Bowhill Banker, 54697; dam, Bowhill English Lady 3rd, 54251.
2nd—J. Watt & Son. English Lady 28th, 67950, Sept. 10th, 1904. Sire, Prince Louis, (Imp) 32082; dam, English Lady 10th, 22935.
3rd—James F. Davidson, Guelph. Red Star, 78567, Nov. 10th, 1905. Sire, Scotland's Fame, (Imp) 50087; dam, Morning Star, 49358.
4th—John Brown & Sons. Princess Atossa 18th, 85253, June 16th, 1904. Sire, Judge, 34626; dam, Princess Atossa 17th, Vol. 18.
5th—J. A. Watt, Elora. Blytheswood Blanche, 57538, Feb. 10th, 1907.

Heifer, 2 years and under 3. Two entries.

1st—Geo. H. Oke, Alvinston. Mildred 16th, 76125, Sept. 26th, 1906. Sire, Scottish Beau, 36099; dam, Mildred 6th, 21067.
2nd—H. Smith. Rosalind's Gem, 80167, March 26th, 1906. Sire, Star Prince, 53900; dam, Bessie Rosalind, 68873.

Heifer, under 2 years. Six entries.

1st—James Leask, Greenbank. Gloster May, 34425, Oct. 1907. Sire, Gloster's Choice, 45238; dam, May Lily, 66978.
2nd—J. Watt & Son. Lady Baroness 3rd, 83075, Jan. 7th, 1907. Sire, Heatherman, 59153; dam, Lady Baroness, 65294.
3rd—J. A. Watt. Secret Rose, 34108, May 1st, 1907.
4th—G. & W. Parkinson, Eramosa. Red Bessie, 80887, Jan. 5th, 1907. Sire, Speedvale Hero, 65551; dam, Bertha's Pet, 52231.
5th—Peter Stewart. Lady Aberdeen 1st, 27604, Nov. 17, 1906. Sire, College Senator, 46048; dam, Lady Aberdeen, 58610.

Best Shorthorn Steer.

1st—D. Gunn & Son, Beaverton.

HEREFORDS AND ABERDEEN-ANGUS.

Steer or Heifer, 1 year and under 2. Three entries.

1st—James Bowman, Guelph. E. P. Beauty 4th, 1852, Sept. 22nd, 1906. Sire, E. P. Raider, 72546; dam, Belle of DeLaval 2nd, 53459.
2nd—James Bowman. E. P. Mayflower 8th, 2128, Oct. 28th, 1906. Sire, E. P. Ranger, 72540; dam, Elm Park Mayflower 3rd, 45948.
3rd—J. W. Burt & Sons, Coningsby. Canada Della, Am. 107868, Sept.. 25th, 1906. Sire, Gen. Delarey, 55517; dam, Canada Marion, 84969.

Steer or Heifer, under 1 year. Three entries.

1st—James Bowman. E. P. Matilda, 2878, Sept. 23rd, 1907. Sire, E. P. Ring Leader 3rd, 83332; dam, Century Place Matilda, 64409.
2nd—R. W. McKinnon, Coningsby. Bruno, Jan. 1908. Sire, Canada Leo, Am. 96273; dam, Lady Hamilton of White House, Am. 92230.
3rd—The F. W. Stone Stock Co., Guelph. Diamond, (on file A.H.R.) Jan. 16th, 1908. Sire, Sweet Cider, C.H.R. 2755, A.H.R. 202229; dam, Peach Stone C., C.H.R. 2145, A.H.R. 153340.

Cow or Heifer, 3 years or over. Five entries.

1st—James Bowman. E. P. Pride 3rd, 1650, Dec. 29th, 1903. Sire, Prince of Benton, 58632; dam, Pride of Powrie 11th, 58633.
2nd—Samuel Young, Guelph. Kyma of Tweedhill 2nd, 36460, Feb. 25th, 1899. Sire, Emlyn of Willowgrove, 20984; dam, Lady Kyma, 17607.
3rd—Walter Hall, Washington. Pride of Maple Bank, 74027, Nov. 4th, 1903. Sire, Klondyke of the Burn, 58546; dam, Pride of Aberdeen, 62927.
4th—F. W. Stone Stock Co. Beach Bar, C.H.R. 4804, A. H.R. 219620, Dec. 13th, 1904. Sire, Baronet, A.H.R. 100989, C.H.R. 1292; dam, Peach 35th, A.H.R. 101444, C.H.R. 3039.
5th—Samuel Young. Springside May, 96974, Oct. 28th, 1904. Sire, Proctor's B. Prince, 34504; dam, Kyma of Tweedhill, 36460.

GALLOWAYS AND DEVONS.

Steer or Heifer, 2 years and under 3. One entry.

1st—D. MacCrae, Guelph. Caadoo, 1667, July 14th, 1906. Sire, Victory, 1304; dam. Cornelia, 1316.

Steer or Heifer, 1 year and under 2. Two entries.

1st—D. MacCrae. Kally, 1657, Oct. 26th, 1906. Sire, Royal Ensign, 1305; dam, Celinda, 1368.
2nd—D. MacCrae. Jane Seaton 9th, 1653, Dec. 30th, 1906. Sire, Royal Ensign, 1305; dam, Beauty 2nd, 1336.

Steer or Heifer under 1 year. Two entries.

1st—D. MacCrae. Cecilia, 1778, Oct. 13th, 1907. Cedric 4th, 1303; dam, Celinda, 1368.
2nd—D. MacCrae. Semiramus 42nd, 1782, Jan. 20th, 1908. Sire, Victory, 1304; dam, Semiramus 36th, 1345.

Cow or Heifer, 3 years and over. Two entries.

1st—D. MacCrae. Miss Mary A. 1409, Jan. 10th, 1905. Sire, Cedric 4th, 1303; dam, Duchess 15th, 14853.

GRADES OR CROSSES.

Steer, 2 years and under 3. Six entries.

1st—James Leask. White King, Oct. 9th, 1905. Sire, Gloster's Choice, 45238.
2nd—John Brown & Son. Rambler, Oct. 1905. Sire, Merry Star, 53069.
3rd—Alex. Edmondson, Brantford. Duke of Brant, Sept. 26th, 1905. Sire, Duke of Brant, 52031.
4th—John Keith, Salem. Salem Lad, Aug. 7th, 1906. Sire, Royal Star, 49775.
5th—Arthur Barr. Blyth. Bob.; Jan. 1906. Sire, Silver Plate, 40203.

Steer, 1 year and under 2. Ten entries.

1st—John Lowe, Elora. Black Hector, Sept. 10th, 1906. Sire, Elm Park Ringleader, 72541.
2nd—James Leask. Red King, Sept. 5th, 1906. Sire, Gloster's Choice, 45238.
3rd—Kyle Bros. Ayr. Chancellor's Stamp, Sept. 17th. Sire, Bapton Chancellor, (Imp) 40359.
4th—John H. Kirby, Marden. John, Mar. 25th, 1907. Sire, Wanderer's Star, 48585.
5th—John Currie, Eramosa. White Socks, Aug. 1907. Sire, Royal Wonder 2nd, 49776.

Steer under 1 year. Fourteen entries.

1st—Kyle Bros. Chancellor's Seal, Sept. 4th. Sire, Bapton Chancellor, (Imp) 40359.
2nd—James McIntosh, Gourock. Harrigan, Sept. 11th, 1907. Sire, Bellman, 59616.
3rd—James Leask. Roan King, Oct. 12th, 1907. Sire, Gloster's Choice, 45238.
4th—H. E. Alton, Jr., Everton, White Lad, Sept. 20th, 1907. Sire, Imperial Beau, 61726.
5th—John P. Henderson, Guelph. Sandy, Nov. 22nd. Sire, Elm Park King 2nd, 72542.

Cow or Heifer, 3 years or over. Six entries.

1st—John Brown & Sons. Ethel.
2nd—James Leask. Lady Watson, Mar. 19th, 1905.
3rd—John Barr. Mabel, Apr., 1905.
4th—Jeremiah Wright, Marden. May 10th, 1904.
5th—John Barr. July, 1905.

Heifer, 2 years and under 3. Six entries.

1st—G. & W. Parkinson. Irene, April 10th, 1906. Sire, Royal Wonder, 2nd, 49776.
2nd—John Keith. Rose Devena, July 21st, 1906. Sire, Royal Star, 49775.
3rd—J. M. Taylor, Guelph Sept. 1906.
4th—Henry W. Ironside, Puslinch. Maggie Schaw, April, 1906. Sire, Jealous Hero, 55589.
5th—E. Brien & Son, Ridgetown. Flora, Dec. 18th, 1905. Sire, Early Morning, 58701.

Heifer under 2 years. Six entries.

1st—Peter Stewart. Lily, Jan. 3rd, 1907. Sire, College Senator, 46048; dam, Whity.
2nd—Robt. Talbot. College Lady, Dec. 20th. Sire, College Senator, 46048; dam, Lady Pink.
3rd—James Leask. Hookey 2nd, Oct. 5th, 1907.
4th—J. M. Taylor. Sept. 1906.
5th—J. W. Burt & Sons. Susie, Oct. 10th, 1906. Sire, Gen. Delarey, 55517.

Three Export Steers. One entry.

1st—John Brown & Sons, Galt.

Grand Championship, Best Beef Animal.

1st—John Lowe, Elora.

DRESSED CARCASSES.

Pure-Breds. Six entries.

1st—The F. W. Stone Stock Company.
2nd—D. MacCrae.
3rd—James Bowman.
4th—H. Smith.
5th—Geo. H. Oke.

Grades or Crosses. Nine entries.

1st—John Brown & Sons.
2nd—John P. Henderson.
3rd—Dan. Wright, Ponsonby.
4th—Chas. McDougall, Guelph.
5th—T. Baker & Son, Solina.

Best Export Steer. Special.

1st—John Brown & Sons.

Grade Steer or Heifer, any age, sired by a pure-bred Aberdeen-Angus Bull. Special.

1st—John Low. 2nd—John Brown & Son. 3rd—John P. Henderson.

Grade Steer, sired by a pure-bred Shorthorn Bull, Special.

1st—James Leask. Sire, Gloster's Choice, 45238.
2nd—Kyle Bros. Sire, Bapton Chancellor, (Imp) 40359.
3rd—James McIntosh. Sire, Bellman, 59616.

Grade Steer, sired by a pure-bred Shorthorn Bull, Amateur Special.

1st—James McIntosh. Sire, Bellman, 59616.
2nd—H. E. Alton, Jr. Sire, Imperial Beau, 61726.
3rd—Geo. Holmwood. Sire, Rose Victor, 64835.
4th—John H. Kirby. Sire, Wanderer's Star, 48585.
5th—John Currie. Sire, Royal Wonder 2nd, 49776.

Grade Steer or Heifer, fed in the County of Wellington, and owned by Exhibitor at least three months previous to the Show, Special.

1st—John Lowe.

Galloway Steer or Heifer, 2 years or over. Special.

1st—D. MacCrae. 2nd—D. MacCrae.

Galloway Steer or Heifer, under 2 years, Special.

1st.—D. MacCrae. 2nd—D. MacCrae.

Grade or Cross, Steer, 2 years and under 3. Amateur Special.

1st—John Keith. 2nd—Alex. Edmondson. 3rd—Arthur Barr.

Grade or Cross, Steer, 1 year and under 2. Amateur Special.

1st—John H. Kirby.
2nd—John Currie.
3rd—C. W. Gerow.
4th—T. Baker & Son.

Grade or Cross, Steer under 1 year. Amateur Special.

1st—James McIntosh.
2nd—H. E. Alton, Jr.
3rd—J. P. Henderson.
4th—Geo. Holmwood.

Grade or Cross, Heifer 2 years and under 3. Amateur Special.

1st—John Keith. 2nd—J. M. Taylor. 3rd—H. W. Ironside.

Grade or Cross, Heifer under 2 years. Amateur Special.

1st—Robt. Talbot. 2nd—J. M. Taylor. 3rd—J. W. Burt & Son

SHEEP.

Cotswolds.

Ewe, under 1 year. Nine entries.

1st—E. Brien & Son. Ridgetown. Brien's 233, 50287, Mar. 1908. Sire, Barret's 11, 36674; dam, Brien's 52, 30228.

2nd—Hugh McNelly, Guelph. Park Ewe, 478, 49644, Mar. 25, 1908. Sire, Swanwick's 131, 44328; dam, Park Ewe 278, 37533.

3rd—E. Brien & Son. Brien's 238, 50360, Mar. 1908. Sire, Barret's 11, 36674; dam, Brien's 149, 43355.

4th—John Sockett, Rockwood. Sockett's 311, 50405, Spring, 1908. Sire, Garner's 70, 24811; dam, Sockett's 119, 35707.

5th—E. Brien & Son. Brien's 239, 50361, Mar. 1908. Sire, Barrett's 11, 36674; dam, Brien's 107, 40352.

3 Ewes, under 1 year. Four entries.

1st.—E. Brien & Son.
2nd—John Sockett.
3rd—Hugh McNelly.

Wether, 1 year and under 2. Six entries.

1st—E. Brien & Son. Brien's B, March, 1907. Sire, Corncracker, 30006; dam, Brien's 88, 33585.

2nd—E. Brien & Son. Brien's A, March, 1907. Sire, Corncracker, 30006; dam, Brien's 88, 33585.

3rd—E. Brien & Son. Brien's C, March, 1907. Sire, Corncracker, 30006; dam, Brien's 53, 30229.

4th—John Sockett. Sockett's 202. Spring, 1907. Sire, Slater's 198, 36098; dam, Sockett's 108, 30830.

5th—Hugh McNelly. April, 1907. Sire, Vance's 38, 25334; dam, Goodfellow's 40, 38283.

Wether, under 1 year. Seven entries.

1st—E. Brien & Son. Brien's F, March, 1908. Sire, Barrett's 11, 36674; dam, Law's 69, 32067.

2nd—E. Brien & Son. Brien's G, March, 1908. Sire, Barrett's 11, 36674; dam, Brien's 16, 22258.

3rd—E. Brien & Son. Brien's E, March, 1908. Sire, Barrett's 11, 36674; dam, Law's 69, 32067.

4th—E. Brien & Son. Brien's D, March, 1908. Sire, Barrett's 11, 36674; dam, Brien's 88, 33585.

5th—John Sockett. Sockett's 67, Spring, 1908. Sire, Garner's 70, 24811; dam, Sockett's 143, 31685.

3 Wethers, under 1 year. Three entries.

1st—E. Brien & Son.
2nd—John Sockett.
3rd—E. Brien & Son.

Best Wether, under 2 years.

1st—E. Brien & Son.

Cotswold Dressed Carcasses.

Wether, 1 year and under 2. Six entries.

1st—E. Brien & Son.
2nd—Hugh McNelly.
3rd—John Sockett.
4th—E. Brien & Son.
5th—E. Brien & Son.

Wether, under 1 year. Four entries.

1st—John Sockett.
2nd—E. Brien & Son
3rd—E. Brien & Son.
4th—E. Brien & Son.

LINCOLNS.

Ewe under 1 year. Ten entries.

1st—John T. Gosnell & Sons, Highgate. Fanny Dudding, 18870, Spring 1908. Sire, Dudding's (Imp.) 265; dam, Gosnell's No. 5, 15274.

2nd—J. T. Gibson, Denfield. Gibson's 455, 18891, Spring, 1908. Sire, Dudding's 512, 16104; dam, Dowsley Queen, 17735.

3rd—John T. Gosnell & Sons. Dudding's Gem, 18872, Spring, 1908. Sire, Dudding's (Imp), 265; dam, Gosnell's No. 3, 13941.

4th—John T. Gosnell & Sons. Dudding's Queen, 18869, Spring, 1908. Sire, Dudding's (Imp.), 265; dam, Gosnell's No. 11, 15280.

5th—J. T. Gibson. Gibson's 464, 18900, Spring, 1908. Sire, Dudding's 512, 16104; dam, Dowsley Gem, 17734.

3 Ewes under 1 year. Four entries.

1st—John T. Gosnell & Sons.
2nd—J. T. Gibson.
3rd—L. Parkinson, Eramosa.
4th—Ernest Parkinson, Eramosa.

Wether, 1 year and under 2. Four entries.

1st—L. Parkinson. Parkinson's 737, Spring, 1907. Sire, Bryon's 9474; dam, Parkinson's 466, 13680.

2nd—L. Parkinson. Parkinson's 738, Spring, 1907. Sire, Bryon's 9474; dam, Parkinson's 469, 13683.

3rd—L. Parkinson. Parkinson's 720, Spring, 1907. Sire, Bryon's 9474; dam, Parkinson's 468, 13682.

4th—L. Parkinson. Parkinson's 721, Spring, 1907. Sire, Bryon's 9474; dam, Parkinson's 464, 13678.

Wether, under 1 year. Seven entries.

1st—John T. Gosnell & Sons. Spring, 1908. Sire, Dudding's 265, 11154; dam, Gould's No. 32, 17376.

2nd—L. Parkinson. Parkinson's 740, Spring, 1908. Sire, Bryon's 9474; dam, Parkinson's 471, 13685.

3rd—J. T. Gibson Spring, 1908. Sire, Dudding's 512, 16104; dam, Gibson's 330, 13923.

4th—J. T. Gibson Spring, 1908. Sire, Dudding's 512, 16104; dam, Gibson's 225, 11944.

5th—L. Parkinson. Dick, Spring, 1908. Sire, Lord Lincoln, 10386; dam, R. S. R.'s A3, 15446.

3 Wethers, under 1 year. Three entries.

1st—L. Parkinson. 2nd—J. T. Gibson. 3rd—L. Parkinson.

Best Wether, under 2 years.

1st—L. Parkinson.

LINCOLN DRESSED CARCASSES.

Wether, 1 year and under 2. Three entries.

1st—L. Parkinson. 2nd—L. Parkinson. 3rd—L. Parkinson.

Wether, under 1 year. Three entries.

1st—L. Parkinson. 2nd—L. Parkinson. 3rd—J. T. Gibson.

LEICESTERS.

Ewe, under 1 year. Twelve entries.

1st—Hastings Bros., Crosshill. Kelly's 720, 11736, March, 1908. Sire, Kelly's Choice, 9708; dam, Kelly's 503, 9354.
2nd—John Kelly, Shakespeare. Kelly's 718, 11735, March, 1908. Sire, Kelly's Choice, 9708; dam, Kelly's Lena, 6676.
3rd—John Kelly. Kelly's 717, 11734, March, 1908. Sire, Kelly's Choice, 9708; dam, Kelly's Lena, 6676.
4th—James Roy, Bornholm. Royal Beatrice 2nd, 11988, March, 1908. Sire, M. L. Wallace, 99, 10413; dam, Royal Beatrice, 7320.
5th—James Roy, Gracie 7th, 11987, March, 1908. Sire, M. L. Wallace, 99, 10413; dam, Miss Delmarch, 9206.

3 Ewes, under 1 year. Six entries.

1st—John Kelly.
2nd—James Roy.
3rd—Hastings Bros.
4th—John Barber, Salem.
5th—Oliver Turnbull, Walton.

Wether, 1 year and under 2. Six entries.

1st—Hastings Bros., Belmont Laddie, 11287, April, 1907. Sire, Sam, 7924; dam, Pauline, 6628.
2nd—A. & W. Whitelaw, Guelph. Peter W. March, 1907. Sire, Ulysses, (Imp.), 10085; dam, Jenny Berry, 2754.
3rd—A. & W. Whitelaw. Bob Remus, April, 1907. Sire, Billy Remus, 9566; dam, Daisy of Guelph 4th, 5413.
4th—John Barr, Blyth. Royal, April, 1907. Sire, Blyth Boy, 9384; dam, Corning's No. 3, 10504.
5th—Hastings Bros. Creole, 11278, April, 1907. Sire, Sam, 7924; dam, Fanny Purchase, 4175.

Wether, under 1 year. Thirteen entries.

1st—John Kelly. March, 1908. Sire, Kelly's Choice, 9708; dam, Kelly's Pride, 4905.
2nd—James Roy. Better Sight, March, 1908. Sire, M. L. Wallace, 99, 10413; dam, Gracie 3rd, 9207.
3rd—A. & W. Whitelaw. Jack W., April, 1908. Sire, Mat. Templeton, 11116; dam, Mary Annison 3rd, 3145.
4th—Oliver Turnbull. Meadow W., 3, March, 1908. Sire, Turnbull's No. 22, 7872· dam, Turnbull's No. 3, 6468.
5th—James Roy. Wallace M., March, 1908. Sire, M. L. Wallace, 99, 10413; dam, Pearlette M. L. 2nd, 9202.

3 Wethers, under 1 year. Four entries.

1st—James Roy.
2nd—A. & W. Whitelaw.
3rd—Oliver Turnbull.
4th—Hastings Bros.

Best Wether, under 2 years.

1st—Hasting Bros.

LEICESTER DRESSED CARCASSES.

Wether, 1 year and under 2. Five entries.

1st—Hastings Bros. 2nd—John Barr. 3rd—A. & W. Whitelaw.

Wether, under 1 year. Four entries.

1st—A. & W. Whitelaw, 2nd—Oliver Turnbull. 3rd—Hastings Bros.

OXFORDS.

Ewes, under 1 year. Fourteen entries.

1st—Alex. Stewart, Living Springs. Stewart's 100, 47130, March, 1908. Sire Hamptonian, 126, 41339; dam, Stewart's 48, 31435.
2nd—Alex. Stewart. Stewart's 102, 47132, March, 1908. Sire, Hamptonian, 126, 41339; dam, Stewart's 69, 37935.
3rd—J. W. Lee & Sons, Simcoe. Lee's Ewe No. 3, 46778, March, 1908. Sire, Hamptonian, 132, 46243; dam, Helbon Queen 2nd, 25685.
4th—J. W. Lee & Sons. Lee's Ewe No. 4, 46780, March, 1908. Sire, Hamptonian, 132, 46243; dam, Lee's Ewe, 102, 35200.
5th—Alex. Stewart. Stewart's 101, 47131, March, 1908. Sire, Hamptonian, 136, 41339; dam, Stewart's 78, 41498.

3 Ewes, under 1 year. Five entries.

1st—Alex. Stewart.
2nd—J. W. Lee & Sons.
3rd—J. A. Cerswell, Bond Head.
4th—A. Stevenson, Atwood.

Wether, 1 year and under 2. Seven entries.

1st—J. W. Lee & Sons. Helbon King, 139, 42274, March, 1907. Sire, Kelmscotonian, 52, 30521.
2nd—W. E. Wright, Glanworth. Wright's 618, 47109, March, 1907.
3rd—J. W. Lee & Sons. Helbon King, 144, 42279, March, 1907. Sire, Kelmscotonian, 52, 30521.
4th—J. A. Cerswell. Cerswell's, 77, 46211, April, 1907. Sire, Sunset, 38348; dam, Arkell's, 1965, 37976.
5th—A. Stevenson. Stevenson's, 82, 43321, March, 1907, Sire, Stewart's 75, 41495; dam, Cousin's 160, 25613.

Wether, under 1 year. Thirteen entries.

1st—J. W. Lee & Sons. Lee's Wether, 74, 47225, March, 1908. Sire, Kelmscotonian, 52, 30521; dam, Lee's Ewe, 98, 34087.
2nd—J. W. Lee & Sons. Lee's Wether, 75, 47226, March, 1908. Sire, Kelmscotonian, 52, 30521; dam, Lee's Ewe, 98, 34087.
3rd—W. E. Wright. Wright's, 625, 47111, March, 1908.
4th—J. A. Cerswell. Cerswell's, 103, 47135, April, 1908. Sire, Sunset, 38348; dam, Cerswell's, 39, 42644.
5th—J. A. Cerswell. Cerswell's, 101, 47133, April, 1908. Sire, Sunset, 38348; dam, Cerswell's, 56, 39752.

3 Wethers, under 1 year. Four entries.

1st—J. W. Lee & Sons.
2nd—J. A. Cerswell.
3rd—W. E. Wright.
4th—A. Stevenson.

Best Wether under 1 year.

1st—J. W. Lee & Sons.

OXFORD DRESSED CARCASSES.

Wether, 1 year and under 2. Seven entries.

1st—J. A. Cerswell.
2nd—A. Stevenson.
3rd—A. Stevenson.
4th—W. E. Wright.
5th—J. W. Lee & Sons.

Wether, under 1 year. Eight entries.

1st—J. W. Lee & Sons.
2nd—J. A. Cerswell.
3rd—A. Stevenson.
4th—W. E. Wright.
5th—W. E. Wright.

SHROPSHIRES.

Ewe, under 1 year. Six entries.

1st—J. & D. J. Campbell, Woodville. Campbell's, 1620, 278202, Spring, 1908.
2nd—J. & D. J. Campbell. Campbell's, 1626, 278204. Spring, 1908.
3rd—J. & D. J. Campbell. Campbell's, 1629, 278205, Spring, 1908.
4th—J. & D. J. Campbell. Campbell's, 1634, 278206, Spring, 1908.
5th—H. & J. Kellum, Simcoe. 285006, March, 1908. Sire, Dream, 204497; dam, Juke's, 43-3, 20453.

3 Ewes, under 1 year. Two entries.

1st—J. & D. J. Campbell.
2nd—Abram Rudell, Hespeler.

Wether, 1 year and under 2. Eight entries.

1st—J. W. Lee & Sons. Campbell's, 29. 282912, April, 1907. Sire, Marauder, 3, 219290; dam, Campbell's 204, 219800.
2nd—W. E. Wright. Wright's, 631, 264783, 1907.
3rd—J. W. Lee & Sons. Campbell's, 30, 282913, April, 1907. Sire, Marauder, 3, 219290; dam, Campbell's, 204. 219800.
4th—W. E. Wright. Wright's, 638, 264784, 1907.
5th—J. & D. J. Campbell. Campbell's, 1563, 260199, Spring, 1907.

Wether, under 1 year. Ten entries.

1st—J. & D. J. Campbell. Campbell's, 1642, 282679, 1908.
2nd—J. & D. J. Campbell. Campbell's, 1654, 282680, 1908.
3rd—J. & D. J. Campbell. Campbell's, 1689, 282683, 1908.
4th—W. E. Wright. Wright's, 608, 283465, 1908.
5th—W. E. Wright. Wright's, 611, 283466, 1908.

3 Wethers, under 1 year. Four entries.

1st—J. & D. J. Campbell.
2nd—J. & D. J. Campbell.
3rd—W. E. Wright.
4th—Abram Rudell.

Best Wether, under 2 years.

1st—J. W. Lee & Sons.

SHROPSHIRE DRESSED CARCASSES.

Wether, 1 year and under 2. Six entries.

1st—W. E. Wright.
2nd—J. W. Lee & Sons.
3rd—Abram Rudell.
4th—W. E. Wright.
5th—J. W. Lee & Sons.

Wether, under 1 year. Six entries.

1st—W. E. Wright.
2nd—Abram Rudell.
3rd—J. & D. J. Campbell.
4th—Abram Rudell.
5th—Abram Rudell.

SOUTHDOWNS.

Ewe, under 1 year. Nine entries.

1st—Telfer Bros., Paris. Simenton, 314, 23464, Spring, 1908. Sire, Jackson, 23, 21600; dam, Simenton Ewe, 215, 17388.
2nd—Geo. Baker, Simcoe. Baker's Ewe, 187, 23346, February 5th, 1908.
3rd—Geo. Baker. Baker's Ewe, 190, 23349, March 3rd, 1908.
4th—Robert McEwen, Byron. McEwen, 4-A, 23405, March, 1908. Sire, Stetchworth Conqueror, 18601; dam, McEwen, 103, 17209.
5th—Geo. Baker. Baker's Ewe, 191, 23763, March 14th, 1908.

3 Ewes, under 1 year. Four entries.

1st—Geo. Baker. 2nd—Geo. Baker. 3rd—Telfer Bros.

Wether, 1 year and under 2. Four entries.

1st—Robert McEwen. McEwen, 234, 22349, March, 1907. Sire, Balnaham Hodge, 17471; dam, Bathurst, 240, 20865.
2nd—Geo. Baker. Baker Wether, 1, 23334.
3rd—Geo. Baker. Baker Wether, 23, 22471.
4th—Robt. McEwen. McEwen 267, March, 1907. Sire, Balnaham Glory, 19655; dam, McEwen, 115, 14081.

Wether, under 1 year. Six entries.

1st—J. W. Lee & Sons. May, 1908. Sire, St. Albon, 17474; dam, Ewe, Ass'n. No. 15966.
2nd—Robt. McEwen. McEwen, 15A, 23758, March, 1908. Sire, Stetchworth Conqueror, 18601; dam, McEwen, 143, 17213.
3rd—Robt. McEwen. McEwen, 38A, 23757, March, 1908. Sire, Stetchworth Conqueror, 18601; dam, McEwen, 94, 13418.
4th—Telfer Bros., Telfer's Wether, 30, Spring, 1908. Sire, Oakley 1st, 21108; dam, Telfer Ewe, 124, 16828.
5th—Telfer Bros. Telfer's Wether, 31, Spring, 1908. Sire, Oakley 1st, 21108; dam, Telfer Ewe, 151, 19866.

3 Wethers, under 1 year. Two entries.

1st—Robt. McEwen. 2nd—Telfer Bros.

Best Wether, under 2 years.

1st—Robt. McEwen.

SOUTHDOWNS, DRESSED CARCASSES.

Wether, 1 year and under 2. Four entries.

1st—Geo. Baker. 2nd—Robt. McEwen. 3rd—Robt. McEwen.

Wether, under 1 year. Three entries.

1st—J. W. Lee & Sons. 2nd—Telfer Bros. 3rd—Robt. McEwen.

DORSET HORNS.

Ewe, under 1 year. Three entries.

1st—R. H. Harding, Thorndale. Harding's, 77, 7749, November, 1907. Sire, Hambro's best Ram Lamb, 3836; dam, Harding's, 38C, 5460.
2nd—R. H. Harding. Harding's 78, 7750, January, 1908. Sire, Hambro's best Ram Lamb, 3836; dam, Dyment's, 36, 4878.
3rd—R. H. Harding. Harding's, 83, 7755, February, 1908. Sire, Hambro's best Ram Lamb, 3836; dam, MacGillivray's, 1006, 4743.

Wether, 1 year and under 2. Four entries.

1st—W. E. Wright. Riverview, 90, 8152, 1907.
2nd—R. H. Harding. Harding's, 69, 6673, February, 1907. Sire, Tranquility, 4530; dam, My Honey, 5636.
3rd—R. H. Harding. Jack, 7148, April, 1907. Sire, Randolph, 5963; dam, Dyment's, 59, 6114.
4th—R. H. Harding. Dixon's best, 7172, May, 1907. Sire, Dixon, 4239; dam, Dyment's, 30, 6115.

Wether, under 1 year. Five entries.

1st—R. H. Harding. Billy Brock, 8171, January, 1908. Sire, Hunter's, 37, 2858; dam, McGillivray's, 5, 3825.
2nd—W. E. Wright. Riverview, 93, 8155, 1908.
3rd—W. E. Wright. Riverview, 94, 8156, 1908.
4th—R. H. Harding. The Hero, 8172, February, 1908. Sire, Hambro's best, 3836; dam, Nettie's Weaver, 2, 7030.

3 Wethers, under 1 year. Two entries.

1st—R. H. Harding. 2nd—W. E. Wright.

Best Wether, under 2 years.

1st—W. E. Wright.

DORSET HORN DRESSED CARCASSES.

Wether, 1 year and under 2. Four entries.

1st—R. H. Harding. 3rd—R. H. Harding.
2nd—R. H. Harding. 4th—W. E. Wright.

Wether, under 1 year. Five entries.

1st—W. E. Wright. 2nd—R. H. Harding. 3rd—R. H. Harding.

HAMPSHIRES OR SUFFOLKS.

Ewe, under 1 year. Four entries.

1st—John Kelly. Kelly's, 57, 16975, March, 1908. Sire, Kelly's Sailor, 6764; dam, Cochran's, 349, 10401.
2nd—Telfer Bros. Telfer's Ewe, 73, 17413, Spring, 1908. Sire, 6754; dam, 11969.
3rd—John Kelly. Kelly's, 53, 16971, March, 1908. Sire, Kelly's Sailor, 6764; dam, Jennie, 8208.
4th—Telfer Bros. Telfer's Ewe, 74, 17414, Spring, 1908. Sire, 6754; dam, 12189.

Wether, under 1 year. Four entries.

1st—John Kelly. Ben, March, 1908. Sire, Kelly's Sailor, 6764; dam, Bonnie Pride, 10611.
2nd—John Kelly. Bob, March, 1908. Sire, Kelly's Sailor, 6764; dam, Bonnie Lass, 10613.
3rd—John Kelly, Bill, March, 1908. Sire, Kelly's Sailor, 6764; dam, Jennie, 8208.

3 Wethers, under 1 year. One entry.

1st—John Kelly.

Best Wether, under 2 years.

1st—John Kelly.

HAMPSHIRE OR SUFFOLK DRESSED CARCASSES.

Wether, under 1 year. Two entries.

1st—John Kelly.

GRADES OR CROSSES, SIRED BY A RAM OF A LONG-WOOLED BREED.

Wether, 1 year and under 2. Nine entries.

1st—E. Brien & Son. Brien's K., March, 1907. Sire, Corncracker, 30006.
2nd—Telfer Bros. Telfer's Favorite, March, 1907. Sire, Clarkson, 14697.
3rd—L. Parkinson. Ike, Spring, 1907. Sire, White's, 26, 13686.
4th—L. Parkinson. Jim, Spring, 1907. Sire, White's, 26, 13686.
5th—L. Parkinson. Mike, Spring, 1907. Sire, White's 26, 13686.

Wether, under 1 year. Seven entries.

1st—E. Brien & Son. Brien's N., March, 1908. Sire, Barrett's 11, 36674.
2nd—A. & W. Whitelaw. Sire, Ulysses, 10085.
3rd—Oliver Turnbull. Meadow W., 5. Sire, Turnbull's No. 22, 7872.
4th—E. Brien & Son. Brien's M., March, 1908. Sire, Barrett's 11, 36674.
5th—L. Parkinson. Parkinson's. 750, Spring, 1908. Sire, Mitchell's, 150, 13435.

3 Wethers, under 1 year. Three entries.

1st—E. Brien & Son. 2nd—A. & W. Whitelaw. 3rd—L. Parkinson.

Best Wether, under 2 years.

1st—E. Brien & Son.

LONG-WOOLED GRADE OR CROSS, DRESSED CARCASSES.

Wether, 1 year and under 2. Six entries.

1st—E. Brien & Son.
2nd—Hastings Bros.
3rd—John Barr.
4th—E. Brien & Son.
5th—L. Parkinson.

Wether, under 1 year. Five entries.

1st—Oliver Turnbull.
2nd—E. Brien & Son.
3rd—L. Parkinson.
4th—A. & W. Whitelaw.
5th—L. Parkinson.

GRADE OR CROSS, SIRED BY A RAM OF A SHORT-WOOLED BREED.

Wether, 1 year and under 2. Six entries.

1st—J. & D. J. Campbell. No. 1, 1907. Sire, Boles', 295, 220252.
2nd—J. & D. J. Campbell. No. 2, 1907. Sire, Boles' 295, 220252.
3rd—J. & D. J. Campbell. No. 3, 1907. Sire, Boles' 295, 220252.
4th—W. E. Wright. Jack, 1907. Sire, The Gentleman, 110866.

Wether, under 1 year. Fifteen entries.

1st—J. & D. J. Campbell. No. 4, Spring, 1908. Sire,, Boles', 295, 220252.
2nd—J. & D. J. Campbell. No. 5, Spring, 1908. Sire. Boles', 295, 220252.
3rd—J. W. Lee & Sons. Sire, Helbon King, 7, 42813.
4th—John Kelly. Joe, 1908. Sire, Kelly's, 30, 5969.
5th—J. & D. J. Campbell. No. 6, Spring, 1908. Sire, Boles', 295, 220252.

3 Wethers. under 1 year. Five entries.

1st—John Kelly.
2nd—J. & D. J. Campbell.
3rd—J. & D. J. Campbell.
4th—W. E. Wright.

Best Wether, under 2 years.

1st—J. & D. J. Campbell.

SHORT-WOOLED GRADE OR CROSS. DRESSED CARCASSES.

Wether, 1 year and under 2. Three entries.

1st—A. Stevenson. 2nd—J. & D. J. Campbell. 3rd—W. E. Wright.

Wether, under 1 year. Ten entries.

1st—J. A. Cerswell.
2nd—J. & D. J. Campbell.
3rd—Abram Rudell.
4th—Abram Rudell.
5th—W. E. Wright.

Best Pure-Bred Wether Lamb, of a Long-Wooled Breed. Special for Amateurs.

1st—James Roy, Bornholm.

Best Pure-Bred Wether Lamb, of a Short-Wooled Breel. Special for Amateurs.

1st—Alex. Stewart, Living Springs.

Pen of Five Lambs, any Breed, Grade or Cross. Special.

1st—J. & D. J. Campbell, Woodville.

Fat Sheep, Bred and Owned by Resident of Wellington County. Special.

1st—A. & W. Whitelaw, Guelph.
2nd— L. Parkinson, Eramosa.
3rd—John Barker, Salem.

Pen of Three Leicester Ewe Lambs. Special.

1st—James Roy, Bornholm.
2nd—James Grill, Elora.

OXFORD DOWN SPECIAL PRIZES.

Yearling Wether.

1st—W. E. Wright. Glanworth.
2nd—J. A. Cerswell, Bond Head.
3rd—A. Stevenson, Atwood.

Lamb Wether.

1st—J. W. Lee & Sons, Simcoe.
2nd—J. W. Lee & Sons.
3rd—W. E. Wright, Glanworth.

Three Wether Lambs.

1st—J. W. Lee & Sons.
2nd—J. A. Cerswell.
3rd—W. E. Wright.

Carcass of Yearling Wether.

1st—J. A. Cerswell.
2nd—A. Stevenson.
3rd—A. Stevenson.

Carcass of Lamb Wether.

1st—J. W. Lee & Sons.
2nd—J. A. Cerswell.
3rd—A. Stevenson.

SHROPSHIRE SPECIAL PRIZES.

Pure Bred Wether, 1 year and under 2.

1st—J. W. Lee & Sons.
2nd—W. E. Wright.
3rd— J. W. Lee & Sons.

Pure-Bred Wether, under 1 year.

1st—J. & D. J. Campbell.
2nd—J. & D. J. Campbell.
3rd—J. & D. J. Campbell.

Three Pure-Bred Wethers, under 1 year.

1st—J. & D. J. Campbell.
2nd—J. & D. J. Campbell.
3rd—W. E. Wright.

Grade Wether, 1 year and under 2, Sired by a Registered Shropshire Ram.

1st—J. & D. J. Campbell.
2nd—J. & D. J. Campbell.
3rd—J. & D. J. Campbell.

Grade Wether, under 1 year, Sired by a Registered Shropshire Ram.

1st, 2nd, 3rd—J. & D. J. Campbell.

SOUTHDOWN. SPECIAL PRIZES.

Ewe, under 1 year.

1st—Telfer Bros.
2nd and 3rd—Geo. Baker.

Three Ewes, under 1 year.

1st and 2nd—Geo. Baker.

Pen, three Ewe Lambs, under 1 year, get of one ram and bred by Exhibitor.

1st—Geo. Baker.
2nd—R. McEwen.

Wether, 1 year and under 2.

1st—R. McEwen.
2nd and 3rd—Geo. Baker.

Wether, under 1 year.

1st, 2nd and 3rd—R. McEwen.

Pen of three Wethers, under 1 year.

1st—R. McEwen.

DORSET-HORN. SPECIAL PRIZES.

Wether, 1 year and under 2.

1st—W. E. Wright.
2nd—R. H. Harding.

Wether, under 1 year.

1st—R. H. Harding.
2nd—W. E. Wright.

Ewe, under 1 year.

1st and 2nd—R. H. Harding.

Best Wether, any age.

1st— W. E. Wright.

LINCOLN, SPECIAL PRIZES.

Ewe Lamb, Bred in Ontario.

1st, 2nd and 3rd—J. T. Gosnell.

Three Ewe Lambs, Bred in Ontario.

1st—J. T. Gosnell.
2nd—E. Parkinson.

SWINE.

YORKSHIRES.

Barrow, 6 months and under 9. Eight entries.

1st—R. F. Duck & Son, Port Credit. March 8th, 1908. Sire, Cedar Lodge Challenge, 22728; dam, Lakeview Queen 3rd, 15912.
2nd—Jos. Featherston & Son, Streetsville. Pine Grove Rufford. Sire, Pine Grove Fashion, 5th, 20800; dam, Pine Grove Ruffa Belle, 10th, 21378.
3rd—J. E. Brethour, Burford.
4th—R. F. Duck & Son. Sire, Cedar Lodge Challenge, 22728; dam, Lakeview Queen, 3rd, 15912.
5th—Jos. Featherston & Son. Pine Grove Rufford, 2nd. Sire, Pine Grove, Fashion, 5th, 20800; dam, Pine Grove Ruffa Belle, 10th, 21378.

Barrow, under 6 months. Six entries.

1st—R. F. Duck & Son. June 10th, 1908. Sire, Cedar Lodge Challenge, 22728; dam, Lakeview Jennie, 3rd, 17706.
2nd—Jos. Featherston & Son. Pine Grove Della, June 3rd, 1908. Sire, Pine Grove Fashion, 3rd, 20800; dam, Pine Grove Sendella, 16th, 26534.
3rd—Jos. Featherston & Son. Pine Grove Della, 2nd, June 3rd, 1908. Sire, Pine Grove Fashion, 3rd, 20800; dam, Pine Grove Sendella, 16th, 26534.
4th—James Wilson & Sons, Fergus. Sire, Broomhouse Mediate, 20328; dam, Monkland Jess, 13th, 23687.

Sow, 9 months and under 15. Seven entries.

1st—J. E. Brethour. Oaklodge Lily, 26842, September 4th, 1907. Sire, Helbon Trump, 17436; dam, Oaklodge Lilly, 4th, 23565.
2nd—James Wilson & Sons. Monkland Jess, 14th, 26003, December 20th, 1907.
3rd—James Wilson & Son. Monkland Jess, 15th, 26004, December 20th, 1907.
4th—Jos. Featherston & Sons. Pine Grove Rufford Belle, 33rd, 26629, October 10th, 1907. Sire, Pine Grove Beau 2nd, 21605; dam, Pine Grove Rufford Belle, 10th, 21378.
5th—J. E. Brethour. O. L. Maiden, 48th, 26857, September 1st, 1907. Sire, O. L. Manifesto, 23272; dam, O. L. Maiden, 41st, 21277.

Sow, 6 months and under 9. Eleven entries.

1st—Jos. Featherston & Son. Pine Grove Rufford Belle, 40th, 26059, April 3rd, 1908. Sire, P. G. Fashion, 3rd, 20800; dam, P. G. Rufford Belle, 2nd, 18858.
2nd—J. E. Brethour. Oaklodge Cinderella, 242, 26843, March 3rd, 1908. Sire, Oak Lodge Quaker, 1860; dam, Oak Lodge Cinderella, 144, 13673.
3rd—J. E. Brethour. Oak Lodge Cinderella, 243, 26844, March 3rd, 1908. Sire, Oak Lodge Quaker, 1860; dam, Oak Lodge Cinderella, 144, 13673.
4th—R. F. Duck & Son. Lake View Queen Jewel, 2nd, 26741, March 8th, 1908. Sire, Cedar Lodge Challenge, 22728; dam, Lakeview Queen, 3rd, 15912.
5th—Jos. Featherston & Son. Pine Grove Rufford Belle, 39th, 26058; April 10th, 1908. Sire, P. G. Fashion, 3rd, 20800; dam, P. G. Rufford Belle, 2nd, 18858.

Sow, under 6 months. Thirteen entries.

1st—J. E. Brethour. Oak Lodge Violet, 26th, 26845, June 2nd, 1908. Sire, Oak Lodge Quaker, 18604; dam, Oak Lodge Violet 8th, 19027.
2nd—J. E. Brethour. Oak Lodge Violet, 27th, 26846, June 2nd, 1908. Sire, Oak Lodge Quaker, 18604; dam, Oak Lodge Violet 8th, 19027.
3rd—Donald Gunn & Son, Beaverton. Dunrobin Bessie, 3rd, 26803, June 7th, 1908. Sire, Summer Hill Victor, 24491; dam, Dunrobin Bessie, 2nd, 26800.
4th—James Wilson & Sons. Monkland Betsy, 26754, June 3rd, 1908.
5th—R. F. Duck & Son. Lakeview Sunbeam, 26739, June 10th, 1908. Sire, Cedar Lodge Challenge, 22728; dam, Lakeview Jennie, 3rd, 17706.

Three Pigs of one Litter, Bred by Exhibitor. Seven entries.

1st—J. E. Brethour.
2nd—Jos. Featherston & Son.
3rd—James Wilson & Sons.
4th—R. F. Duck & Son.

Best Barrow shown by an amateur exhibitor.

1st—D. Gunn & Son.

Best Sow shown by an amateur exhibitor.

1st—D. Gunn & Son

BERKSHIRES.

Barrow, 6 months and under 9. Seven entries.

1st—John Kelly, Shakespeare. Bill, March 11th, 1908. Sire, Oak Park Topper, 18841; dam, Shakespeare Queen, 13170.

2nd—Herman Koelln & Son, Glen Allen. March 3rd, 1908. Sire, Concord Master, 14595; dam, River View Minnie, 18850.

3rd—E. Brien & Son, Ridgetown. Brien A., March 15th, 1908. Sire, Perfection (Imp.), 9801; dam, Princess, 16828.

4th—E. Brien & Son. Brien B., March 15th, 1908. Sire, Perfection (Imp.), 9801; dam, Princess, 16828.

5th—W. W. Brownridge, Ashgrove, Sam., April 10th, 1908. Sire, Sovereign D., 19818; dam, Countess of Wadford, 24th, 20306.

Barrow, under 6 months. Six entries.

1st—W. W. Brownridge. Sally, June 1st, 1908. Sire, Sally's Ensign, 17628; dam, Compton Lizzie, 20304.

2nd—John S. Cowan Donegal. Fairview Lad, June 2nd, 1908. Sire, Tom, 17266; dam, Maple Lodge Belle, 17225.

3rd—Herman Koelln & Son. June 4th, 1908. Sire, York Lodge Tom, 6th, 12285; dam, Doctor's Manor Lady, 18339.

4th—W. W. Brownridge. Sally's Fairboy, July 18th, 1908. Sire, Sally's Ensign, 17628; dam, Compton Mary, 20305.

5th—E. Brien & Son. Brien D., June 3rd, 1908. Sire, Perfection (Imp.), 9801; dam, Woodburn Emma, 16825.

Sow, 9 months and under 15. Five entries.

1st—W. W. Brownridge. Wandsworth Jean, 20440, September 6th, 1907. Sire, Polegate Beauty 2nd, 19431; dam, Countess of Wandsworth, 20306.

2nd—E. Brien & Son. Woodburn Jewel, 20327, November 10th, 1907. Sire, Perfection (Imp.), 9801; dam, Bonnie Maid, 13702

3rd—John S. Cowan. Fairview Rose Bud, 20467, December 12th, 1907. Sire, Tom, 17266; dam, Maple Lodge Belle, 17225.

4th—John S. Cowan. Fairview Prime Rose, 20468, December 12th, 1907. Sire, Tom, 17266; dam, Maple Lodge Belle, 17225.

Sow, 6 months and under 9. Fifteen entries.

1st—Joshua Lawrence, Oxford Centre. Oxford Daisy, 20389, March 9th, 1908. Sire, British Duke, 18376; dam, Durham's Dawn, 14722.

2nd—John Kelly. Kelly's, 34, 19677, March 11th, 1908. Sire, Oak Park Topper, 18841; dam, Shakespeare Queen, 13170.

3rd—W. W. Brownridge. Wandsworth Anna, 20444, April 10th, 1908. Sire, Sovereign D., 19818; dam, Countess of Wandsworth, 20306.

4th—W. W. Brownridge. Wandsworth Annie, 20445, April 10th, 1908. Sire, Sovereign D., 19818; dam, Countess of Wandsworth, 20306.

5th—John Kelly. Kelly's 35, 19678, March 11th, 1908. Sire, Oak Park Topper, 18841; dam, Shakespeare Queen, 13170.

Sow, under 6 months. Fourteen entries.

1st—W. W. Brownridge. Lucy, 20446, June 1st, 1908. Sire, Sally's Ensign, 17628; dam, Compton Lizzie, 20304.

2nd—Herman Koelln & Son. River View Naomi, 20428, June 4th, 1908. Sire, York Lodge Tom, 16th, 12285; dam, Doctor's Manor Lady, 18339.

3rd—W. W. Brownridge. Laura, 20447, June 1st, 1908. Sire, Sally's Ensign, 17628; dam, Compton Lizzie, 20304.

4th—Joshua Lawrence. Oxford Queen, 4th, 20395, June 15th, 1908. Sire, British Duke, 18376; dam, Oxford Queen, 17265.

5th—John S. Cowan. Fairview Charm, 20466, June 20th, 1908. Sire, Sunbeam, 19247; dam, Fairview Rose, 13727.

Three Pigs of one Litter, Bred by Exhibitor. Seven entries.

1st—W. W. Brownridge.
2nd—John Kelly.
3rd—W. W. Brownridge.
4th—Herman Koelln.

TAMWORTHS.

Barrow, 6 months and under 9. Five entries.

1st—Chas. Currie, Morriston. Morriston Tom, March 7th, 1908. Sire, Newcastle Choice, 3415; dam, Morriston Bessie, 4452.
2nd—D. Douglas & Sons, Mitchell. Rex, April, 1908. Sire, Maple Hurst King, 3904; dam, Maple Hurst Mina, 4861.
3rd—D. Douglas & Sons. Lucky Boy, April, 1908. Sire, Maple Hurst King, 3904; dam, Maple Hurst Mina, 4861.
4th—Chas. Currie. Morriston Timothy, March 7th, 1908. Sire, Newcastle Choice, 3415; dam, Morriston Bessie, 4452.
5th—D. Douglas & Sons. Arnold, April, 1908. Sire, Maple Hurst King, 3904; dam, Maple Hurst Mina, 4861.

Barrow, under 6 months. Five entries.

1st—Chas. Currie. Morriston Jack, June 4th, 1908. Sire, Knowle King David, 5226; dam, Morriston Lady, 5201.
2nd—D. Douglas & Sons. Major, July, 1908. Sire, Troy Boy, 2792; dam, Sal, 4344.
3rd—D. Douglas & Sons. Bill, July, 1908. Sire, Troy Boy, 2792; dam, Sal, 4344.
4th—D. Douglas & Sons. Bob, July, 1908. Sire, Troy Boy, 2792; Dam, Sal, 4344.
5th—Chas. Currie. Morriston John, June 4th, 1908. Sire, Knowle King David, 5266; dam, Morriston Lady, 5201.

Sow, 9 months and under 15. Five entries.

1st—D. Douglas & Sons. Maple Hurst Hazel, 5717, October 25th, 1907. Sire, Morriston George, 4806; dam, Maple Hurst Daisy, 4341.
2nd—Chas. Currie. Morriston Sadie, 5499, September 2nd, 1907. Sire, Newcastle Choice, 3415; dam, Thrifty Pink, 3871.
3rd—D. Douglas & Sons. Maple Hurst Lena, 5718, October 25th, 1907. Sire, Morriston George, 4806; dam, Maple Hurst Daisy, 4341.
4th—D. Douglas & Sons. Maple Hurst Dinah, 5719, October 25th, 1907. Sire, Morriston George, 4806; dam, Maple Hurst Daisy, 4341.
5th—Chas. Currie. Morriston Sibby, 5501, September 2nd, 1907, Sire, Newcastle Choice, 3415; dam, Thrifty Pink, 3871.

Sow, 6 months and under 9. Six entries.

1st—D. Douglas & Sons. Maple Hurst Bertha, 5720, April, 1908. Sire, Maple Hurst King, 3904; dam, Maple Hurst Mina, 4861.
2nd—Chas. Currie. Morriston Belle, 5737, March 7th, 1908. Sire, Newcastle Choice. 3415; dam, Morriston Bessie, 4452.
3rd—Chas. Currie. Morriston Bertha, 5736, March 7th, 1908. Sire, Newcastle Choice, 3415; dam, Morriston Bessie, 4452.
4th—D. Douglas & Sons. Maple Hurst Primrose, 5721, April, 1908. Sire, Maple Hurst King, 3904; dam, Maple Hurst Mina, 4861.
5th—D. Douglas & Son. Maple Hurst Empress, 5722, April, 1908. Sire, Maple Hurst King, 3904; dam, Maple Hurst Mina, 4861.

Sow, under 6 months. Seven entries.

1st—D. Douglas & Sons. Maple Hurst Hannah, 5723, July, 1908. Sire, Troy Boy, 2792; dam, Sal, 4344.
2nd—Chas. Currie. Morriston Ella, 5740, June 4th, 1908. Sire, Knowle King David, 5226; dam, Morriston Lady, 5201.
3rd—Chas. Currie. Morriston Edith, 5741, June 4th, 1908. Sire, Knowle King David, 5226; dam, Morriston Lady, 5201.
4th—D. Douglas & Sons. Maple Hurst Cora, 5724, July, 1908. Sire, Troy Boy, 2792; dam, Sal, 4344.
5th—D. Douglas & Son. Maple Hurst Stella, 5725, July, 1908. Sire, Troy Boy, 2792; dam, Sal, 4344.

Three Pigs of one Litter, bred by Exhibitor. Three entries.

1st—D. Douglas & Sons.
2nd—Chas. Currie.
3rd—D. Douglas & Sons.

CHESTER WHITES.

Barrow, 6 months and under 9. Two entries.

1st—Daniel DeCourcy, Bornholm. Ned, March 4th, 1908. Sire, Burnside Standard, 3204; dam, Tessie, 3370.
2nd—Daniel DeCourcy. Fred, March 4th, 1908. Sire, Burnside Standard, 3204; dam, Tessie, 3370.

Barrow, under 6 months. Two entries.

1st—Daniel DeCourcy. Jack, June 1st, 1908. Sire, Silver Jack, 4341; dam, White Bunty, 3073.
2nd—Daniel DeCourcy. Jill, June 1st, 1908. Sire, Silver Jack, 4341; dam, White Bunty, 3073.

Sow, 9 months and under 15. Two entries.

1st—Daniel DeCourcy. Lady A., 5156, September 20th, 1907. Sire, Silver Jack, 4341; dam, Tessie, 3370.
2nd—Daniel DeCourcy. Lady B., 5157, September 20th, 1907. Sire, Silver Jack, 4341; dam, Tessie, 3370.

Sow, 6 months and under 9. Two entries.

1st—Daniel DeCourcy, Lady C., 5158, March 4th, 1908. Sire, Burnside Standard, 3204; dam, Tessie, 3370.
2nd—Daniel DeCourcy, Lady D., 5159, March 4th, 1908. Sire, Burnside Standard, 3204; dam, Tessie, 3370.

Sow, under 6 months. Three entries.

1st—Daniel DeCourcy. Model Sow 4, 5214. Sire, Silver Jack, 4341; dam, White Bunty, 3073.
2nd—Daniel DeCourcy. Model Sow, 2, 5215. Sire, Silver Jack, 4341; dam, White Bunty, 3073.
3rd—Daniel DeCourcy. 5216. Sire, Silver Jack, 4341; dam, White Bunty, 3073.

Three Pigs of one Litter, Bred by Exhibitor. Two entries.

1st—Daniel DeCourcy, Bornholm.
2nd—Daniel DeCourcy, Bornholm.

ANY OTHER BREED, GRADE OR CROSS.

Barrow, 6 months and under 9. Eleven entries.

1st—Chas. Currie, Morriston.
2nd—R. F. Duck & Son, Port Credit.
3rd—D. Douglas & Sons, Mitchell.
4th—E. Brien & Sons, Ridgetown.
5th—A. O'Neil & Son, Birr.
6th—A. O'Neil & Son, Birr.

Barrow, under 6 months. Thirteen entries.

1st—R. F. Duck & Son, Port Credit.
2nd—Daniel DeCourcy, Bornholm.
3rd—W. W. Brownbridge, Ashgrove.
4th—D. Douglas & Sons, Mitchell.
5th—John S. Cowan, Donegal.
6th—A. O'Neil & Son, Birr.

Sow, 6 months and under 9. Eleven entries.

1st—R. F. Duck & Son, Port Credit.
2nd—Jos. Featherston & Son, Streetsville.
3rd—D. Douglas & Sons, Mitchell.
4th—D. Douglas & Sons, Mitchell.
5th—Chas. Currie, Morriston.
6th—R. Houston, Dixie.

Sow, under 6 months. Twelve entries.

1st—W. W. Brownridge, Ashgrove.
2nd—Chas. Currie, Morriston.
3rd—D. Douglas & Sons, Mitchell.
4th—Daniel DeCourcy, Bornholm.
5th—John S. Cowan, Donegal.
6th—John S. Cowan, Donegal.

EXPORT BACON HOGS.

Two Pure-Breds. Twenty-five entries.

1st—J. E. Brethour, Burford.
2nd—Jos. Featherston & Sons, Streetsville.
3rd—D. Douglas & Sons, Mitchell.
4th—R. F. Duck & Son, Port Credit.
5th—Jas. Wilson & Sons, Fergus.
6th—Jos. Featherston & Sons, Streetsville.
7th—Chas. Currie, Morriston.
8th—R. F. Duck & Son, Port Credit.
9th—J. E. Brethour, Burford.
10th—D. Douglas & Sons, Mitchell.
11th—J. E. Brethour, Burford.

Two Grades or Crosses. Eighteen entries.

1st—R. F. Duck & Sons, Port Credit.
2nd—J. E. Brethour, Burford.
3rd—Jos. Featherston & Sons, Streetsville.
4th—Jas. Wilson & Son, Fergus.
5th—R. F. Duck & Son, Port Credit.
4th—Jos. Featherston & Sons, Streetsville.
7th—J. E. Brethour, Burford.

Two Best Export Bacon Hogs.

1st—J. E. Brethour, Burford.

DRESSED CARCASSES.

Two Pure-Breds. Twenty-two entries.

1st—Jos. Featherston & Sons, Streetsville.
2nd—Jos. Featherston & Sons, Streetsville.
3rd—J. E. Brethour, Burford.
4th—D. Douglas & Sons, Mitchell.
5th—R. F. Duck & Son, Port Credit.
6th—J. E. Brethour, Burford.
7th—R. F. Duck & Son, Port Credit.
8th—J. E. Brethour, Burford.
9th—R. F. Duck & Son, Port Credit.
10th—Jos. Featherston & Sons, Streetsville.
11th—Donald Gunn & Son, Beaverton.

Two Grades or Crosses. Seventeen entries.

1st—Jos. Featherston & Sons, Streetsville.
2nd—R. F. Duck & Son, Port Credit.
3rd—R. Houston, Dixie.
4th—Jos. Featherston & Sons, Streetsville.
5th—Chas. Currie, Morriston.
6th—R. Houston, Dixie.
7th—R. Houston, Dixie.

Two Best Carcasses.

1st—Jos. Featherston & Sons, Streetsville.

JUDGING COMPETITION.

Beef Cattle. Forty-eight entries.

1st—R. J. Allen, O.A.C.
2nd—S. Kennedy, O.A.C.
3rd—W. N. Campbell, O.A.C.
4th—A. D. Campbell, O.A.C.
5th—M. S. Middleton, O.A.C.
6th—Angus McMillan, O.A.C.
7th—R. G. Thomson, O.A.C.
8th—A. M. Shaw, O.A.C.
9th—A. McTaggart, O.A.C.
10th—W. R. Reek, O.A.C.

Dairy Cattle. Forty-nine entries.

1st—R. B. Coglan, O.A.C.
2nd—R. Schuyler.
3rd—C. M. Learmouth, O.A.C.
4th—G. S. Dunkin, O.A.C.
5th—A. McTaggart, O.A.C.
6th—S. H. Culp, O.A.C.
7th—C. Rebsch, O.A.C.
8th—M. N. Baldwin, O.A.C.
9th—C. L. Palmer, O.A.C.
10th—R. H. Pilsworth, O.A.C.

Sheep. Twenty-eight entries.

1st—D. H. Kelly, Shakespeare.
2nd—S. Kennedy, O.A.C.
3rd—W. H. Irvin, O.A.C.
4th—J. F. Harries, O.A.C.
5th—J. E. Rettie, O.A.C.
6th—C. Main, O.A.C.
7th—R. G. Thompson, O.A.C.
8th—C. F. McEwen, Byron.
9th—J. C. Young, O.A.C.
10th—Gordon A. Burns, Paris.

Swine. Thirty-one entries.

1st—J. S. Howell. O.A.C.
2nd—W. H. Irvin. O.A.C.
3rd—M. McArthur, O.A.C.
4th—Gordon A. Burns, Paris.
5th—W. G. Orvis, O.A.C.
6th—F. Forsyth, O.A.C
7th—W. Toole, O.A.C.
8th—H. A. Cowie, O.A.C.
9th—R. R. Moore, O.A.C.
10th—M. N. Baldwin, O.A.C.

SEEDS.

Fall Wheat, White. Eleven entries.

1st—T. Baker & Son, Solina.
2nd—Andrew Schmidt, Mildmay.
3rd—Geo N. Harris, Lynden.
4th—Walter Hartman, Clarksburg.

Fall Wheat, Red or Amber. Seven entries.

1st—Jas. Snetsinger, Eamers' Corners.
2nd—Andrew Schmidt, Mildmay.
3rd—Isaac T. Knight & Co., Arkell.
4th—D. H. Taylor, Corwhin.

Spring Wheat. Four entries.

1st—A. R. Wood, Fergus.
2nd—Walter Hartman, Clarksburg.
3rd—Thomas B. Lush, Barrie Hill.

Goose Wheat. Four entries.

1st—Thomas B. Lush, Barrie Hill.
2nd—A. R. Wood, Fergus.
3rd—S. A. Northcott, Taunton.
4th—Andrew Harmer, Plattsville.

Oats, White. Twenty entries.

1st—Jas. Snetsinger, Eamers' Corners.
2nd—Andrew Schmidt, Mildmay.
3rd—Wm. Lewis, Dunsford.
4th—T. Baker & Son, Solina.

Oats, Black. Four entries.

1st—Thos. B. Lush, Barrie Hill.
2nd—Andrew Schmidt, Mildmay.
3rd—N. P. Schmidt, Mildmay.
4th—G. B. Hood, Guelph.

Barley, Six-Rowed. Twelve entries.

1st—Walter Hartman, Clarksburg.
2nd—Jas. Snetsinger, Eamers' Corners.
3rd—N. P. Schmidt, Mildmay.
4th—G. N. Harris, Lynden.

Field Peas, Large. Two entries.

1st—Wm. W. Ramage, Thistle.
2nd—S. A. Northcott, Taunton.

Field Peas, Small. Ten entries.

1st—Robert Talbot, Everton.
2nd—Peter McLaren, Hillsburg.
3rd—Edward Buckland, Fergus.
4th—S. A. Northcott, Taunton.

Red Clover. Six entries.

1st—S. A. Northcott, Taunton.
2nd—Andrew Schmidt, Mildmay.
3rd—J. A. Fletcher, Valetta.
4th—Geo. Baker, Simcoe.

Alsike. Two entries.

1st—Geo. Baker, Simcoe.
2nd—S. A. Northcott, Taunton.

Timothy. Three entries.

1st—Walter Hartman, Clarksburg. 2nd—S. A. Northcott, Taunton.

Potatoes, Long White Type. Eleven entries.

1st—Richard Houston, Dixie. 3rd—A. R. Wood, Fergus.
2nd—A. R. Woods, Fergus. 4th—Edward Buckland, Fergus.

Potatoes, Round White Type. Nine entries.

1st—F. W. Krouse, Guelph. 3rd—Jas. Snetsinger, Eamers' Corners.
2nd—Peter McLaren, Hillsburg. 4th—H. E. Alton, Jr., Everton.

Potatoes, Other than White. Ten entries.

1st—Scanlon Bros., Ennotville. 3rd—D. H. Taylor, Corwhin.
2nd—Isaac T. Knight & Co., Arkell. 4th—Jas. Snetsinger, Eamers' Corners.

Corn, Flint, Eight-Rowed Variety. Twelve entries.

1st—Geo. Baker, Simcoe. 3rd—W. J. Fuller, Leamington.
2nd—L. D. Hankinson, Grovesend. 4th—D. W. Campbell, Snelgrove.

Corn, Flint, Twelve Rowed Variety. Seven entries.

1st—Edward Smith, Ridgetown. 3rd—Arch. MacColl, Aldboro.
2nd—D. W. Campbell, Snelgrove. 4th—W. J. Campbell, Snelgrove.

Corn, Dent, White. Nine entries.

1st—G. W. Coatsworth & Son, Kingsville. 3rd L. C. Palmer, Kingsville.
4th—J. O. Duke. Olinda.
2nd—B. A. Smith, Ruthven.

Corn, Dent, Yellow. Four entries.

1st—A. H. Woodbridge, Kingsville. 3rd—John P. Pearce, Staples.
2nd—G. W. Coatsworth & Son, Kingsville. 4th—J. A. Fletcher, Valetta.

SPECIAL PRIZES OF THE CANADIAN SEED GROWERS' ASSOCIATION.

Fall Wheat, Exhibited of Hand-Selected Plants. One entry.

1st—Wm. Lewis, Dunsford.

Fall Wheat, Group Exhibits. Three entries.

1st—C. R. Gies, Heidelberg. 2nd—Herbert Davidson, Mount Nemo.

Spring Wheat, Group Exhibits. One entry.

1st—Robert McKay, Maxville.

Oats, White, Exhibits of Hand-Selected Plants. Four entries.

1st—John Hunter, Wyoming. 3rd—Arch. MacColl, Aldboro.
2nd—C. R. Gies, Heidelburg. 4th—Wm. Lewis, Dunsford.

Oats, White, Group Exhibits. Two entries.

1st—Duncan Carmichael, Jr., West Lorne. 2nd—Wm. W. Ramage, Thistle.

Barley, Six-Rowed, Exhibits of Hand-Selected Plants. Two entries.

1st— C. R. Gies, Heidelburg. 2nd—Arch. MacColl, Aldboro.

Barley, Six-Rowed, Group Exhibits. Three entries.

1st—Duncan Carmichael, Jr., West Lorne. 2nd—Duncan Carmichael, Jr., West Lorne.

Corn, Best Ten ears, any Eight-Rowed Variety. Flint, Three entries.

1st—L. D. Hankinson, Grovesend.

Corn, Best Ten ears, any Twelve-Rowed Variety, Flint. One entry.

1st—Edward Smith, Ridgetown.

Corn, Best Ten ears, any Variety Dent, White. Three entries.

1st—Jos. C. Thomas, Blytheswood.
2nd—John Hunter, Wyoming.

Corn, Best Ten ears, any Variety Dent, Yellow. Four entries.

1st—G. W. Coatsworth & Son, Kingsville.
2nd—A. H. Woodbridge, Kingsville.
3rd—John P. Pearce, Staples.
4th—Duncan Carmichael, Jr., West Lorne.

Corn, Best Ten ears, any Variety Sweet Corn (Late). Two entries.

1st—H. & J. McKee, Norwich.
2nd—J. O. Duke, Olinda.

Corn, Best Ten ears, any Variety Sweet Corn (Early). Two entries.

1st—Chas. Pearce, Wellington.

Wheat, any Spring Variety shown by a Beginner. One entry.

1st—Walter Hartman, Clarksburg.

Wheat, any Fall Variety shown by a Beginner. One entry.

1st—Duncan Carmichael, Jr., West Lorne.

Oats, any White Variety shown by a Beginner. One entry.

1st—Duncan Carmichael, Jr., West Lorne.

Barley, any Six-Rowed Variety shown by a Beginner. One entry.

1st—Walter Hartman, Clarksburg.

Corn, Ten ears, any Eight-Rowed Variety Flint shown by a Beginner. Three entries.

1st—Robt. Thompson, St. Catharines.
2nd—J. O. Duke, Olinda.
3rd—W. J. Fuller, Leamington.

Corn, Ten ears, any Variety White Dent shown by a Beginner. One entry.

1st—B. A. Smith, Ruthven.

Corn, Ten ears, any Variety Yellow Dent shown by a Beginner. One entry.

1st—Arch. MacColl, Aldboro.

Corn, Ten ears, any variety Sweet Corn (Late) shown by a Beginner. One entry.

1st—Duncan Carmichael, Jr., West Lorne.

Corn, Ten ears, any Variety Sweet Corn (Early) shown by a Beginner. One entry.

1st—J. O. Duke, Olinda.

Potatoes, Round, White Type, shown by a Beginner. One entry.

1st—Geo. N. Harris, Lynden.

Best Bushel of Alsike Clover Seed. Special.

1st—Geo. Baker, Simcoe.

Best Exhibit of Twenty-five ears of Dent Corn Grown in Ontario. Special.

1st—G. W. Coatsworth & Son, Kingsville.

Best Exhibit of Twenty-five ears of Flint Corn grown in Ontario. Special.

1st—Edward Smith, Ridgetown.

Sweepstakes, Special for Member making the most Creditable showing of Selected Seed for the Whole Exhibition.

1st—Duncan Carmichael, Jr., West Lorne.

DAIRY TEST.

Name of Animal and Exhibitor.	Lbs. Milk.	Per cent. fat.	Lbs. fat.	Lbs. solids not fat.	Points for day's milking.	Points for fat.	Points for solids not fat.	Total points.
Class 50, Sec. 1.—Shorthorn Cow, 48 months and over.								
1st. Kentucky Queen, 38948, James Brown, Norval	141.57	3.3	4.67	13.61	.....	116.82	40.84	157.66
2nd. White Rose, 34931, James Brown, Norval	122.71	3.3	4.13	11.51	2	103.39	34.54	139.84
Class 50, Sec. 2.—Shorthorn Cow, 36 months and under 48.								
1st. Lady Guelph, 76721, James Brown, Norval	100.19	4.	4.	9.80	4	100.19	29.42	133.61
Class 50, Sec. 3.—Shorthorn Heifer, under 36 months.								
1st. Butterfly Rose, 81642, James Brown, Norval	98.44	4.1	4.06	9.95	3	101.59	29.87	134.46
2nd. Kilblean Beauty 2nd, 75426, James Brown, Norval	84.34	3.8	3.28	8.30	1	82.10	24.91	108.02
3rd. Gracie Guynes 3rd, 85218, Jno. Kelly, Shakespeare	71.25	4.5	3.23	7.36	2	80.92	22.10	105.02
Class 51, Sec. 1.—Ayrshire Cow, 48 months and over.								
1st. Rosalie of Hickory Hill, N. Dyment, Clappison	147.36	4.	5.89	14.42	.....	147.36	43.27	190.63
2nd. Sarah's 2nd, 13192, H. & J. McKee, Norwich	165.01	3.4	5.71	15.72	.....	142.97	47.19	190.16
3rd. Victoria, 13788, H. & J. McKee, Norwich	151.49	3.6	5.60	15.09	.....	140.05	45.29	185.34
Class 51, Sec. 2.—Ayrshire Cow, 36 months and under 48.								
1st. Star's Nancy, 20138, H. & J. McKee, Norwich	122.09	3.9	4.80	11.68	.....	120.09	35.06	155.15
Class 51, Sec. 3.—Ayrshire Heifer, under 36 months.								
1st. Queen Jessie of Spring Hill, 21166, H. & J. McKee, Norwich	108.33	4.1	4.47	10.91	.....	111.87	32.74	144.61
2nd. Star's Sarah, 21541. H. & J. McKee, Norwich	105.62	4.	4.23	10.19	3	105.75	30.57	139.32
3rd. Beauty of Hickory Hill, N. Dyment, Clappison	93.45	3.5	3.29	8.80	.....	82 49	26.42	108.91
Class 52, Sec. 1.—Holstein Cow, 48 months and over.								
1st. Lady Aggie DeKol, 4127, M. L. Haley, Springford	203.38	3.7	7.59	17.99	.....	189.83	53.99	243.82
2nd. Evergreen March, 3896, G. W. Clemons, St. George	187.88	3.7	7.07	16.16	1	176.79	48.50	226.29
3rd. Idaline Pauline DeKol, 57127, Geo. Rice, Tilsonburg	197.26	3.3	6.57	17.95	4	165.41	53.85	223.26
4th. Netherland DeKol Glenice, 68355, G. Rice, Tilsonburg	163.13	2.9	4.73	13.82	.....	118.26	41.46	159.73
5th. Lady Bess Boon, 63752, G. Rice, Tilsonburg	161.95	2.5	4.15	14.93	.....	103.91	44.82	148.73
Class 52, Sec. 2.—Holstein Cow, 36 months and under 48.								
1st. Iantha Jewel Posch. 4596, Jas. Rettie, Norwich	211.18	2.9	6.19	18.97	.....	154.97	56.91	211.89
2nd. Pontiac Atlas Maid, Jas. Rettie, Norwich	160.39	3.6	5.93	15.57	.....	148.25	46.74	194.99
Class 52, Sec. 3.—Holstein Heifer, under 36 months.								
1st. Eloree, 6959, Jas. Rettie, Norwich	157.	4.	6.38	15.26	.....	159.59	45.80	205.30
2nd. Queen Butter Baroness, 7652, M. L. Haley, Springford	110.70	4.2	4.72	10.45	5	118.02	31.36	154.38
3rd. Queen's Butter Girl, 8815, G. Rice, Tilsonburg	114.33	3.8	4.36	11.29	.....	109.23	33.87	143.10
4th. Arah Veeman, 98698, G. Rice, Tilsonburg	126.31	3.3	4.25	11.64	.....	106.32	34.94	141.27
5th. Marcena Jewel, 9081, Jas. Rettie, Norwich	104.01	2.9	3.05	9.51	.....	76.27	28.55	104.82
Class 53, Sec. 1.—Jersey Cow, 48 months and over.								
1st. Cantata of Normanby, A.J.C.C., 158437, B. H. Bull & Sons, Brampton	130.20	4.6	6.11	12.80	.....	152.88	38.42	191.31
Class 55. Sec. 2.—Grade Cow, 36 months and under 48.								
1st. Daisy D., M. L. Haley, Springford	133.69	3.8	5.21	12.79	.....	132.75	38.39	171.15

POULTRY.

List Gives Number of Entries and Awards in Each Section.

For Post Office address of Exhibitors, see page 283.

Light Brahmas.

Cocks, 9.—1st and 2nd, H. W. Partlo; 3rd, John W. Jarvis.
Hens, 12.—1st, 2nd, 3rd, and 4th, H. W. Partlo.
Cockerels, 8.—1st and 2nd, H. W. Partlo; 3rd, Mrs. Chas. Waters.
Pullets, 7.—1st and 2nd, H. W. Partlo; 3rd, John W. Jarvis.

Dark Brahmas.

Cocks, 4.—1st and 3rd, L. C. Sage; 2nd, C. H. Wilson.
Hens, 4.—1st, Jas. Snetsinger; 2nd and 3rd, L. C. Sage.
Cockerels, 6.—1st and 2nd, C. A. R. Tilt; 3rd, Fred Bunt.
Pullets, 5.—1st, L. C. Sage; 2nd, C. A. R. Tilt; 3rd, C. H. Wilson.

Buff Cochins.

Cocks, 5.—1st, Holmhurst Poultry Yards; 2nd, Hugh Wyatt; 3rd, J. Alvin Small.
Hens, 7.—1st, Hugh Wyatt; 2nd, E. M. Deverell; 3rd, Holmhurst Poultry Yards.
Cockerels, 7.—1st and 3rd, Hugh Wyatt; 2nd, Holmhurst Poultry Yards.
Pullets, 7.—1st, and 2nd, Hugh Wyatt; 3rd, Holmhurst Poultry Yards.

Partridge Cochins.

Cocks, 3.—1st, C. H. Wilson; 2nd, F. Wales; 3rd, Richard Oke.
Hens, 2.—1st, Richard Oke; 2nd, F. Wales.
Cockerels, 4.—1st, Richard Oke; 2nd, John Handley; 3rd, F. Wales.
Pullets, 5.—1st and 3rd, F. Wales; 2nd, John Handley.

Black Cochins.

Cocks, 2.—1st, C. A. R. Tilt.
Hens, 2.—1st and 2nd, C. A. R. Tilt.
Cockerels, 1.—1st, C. A. R. Tilt.
Pullets, 1.—1st, C. A. R. Tilt.

White Cochins.

Cocks, 2.—1st and 2nd, Hy. Emrick.
Hens, 2.—1st and 2nd, Hy. Emrick.
Cockerels, 2.—1st, Harry T. Lush; 2nd, Hy. Emrick.
Pullets, 2.—1st, Hy. Emrick; 2nd, Harry T. Lush.

Black Langshans.

Cocks, 3.—1st, C. A. R. Tilt; 2nd and 3rd, R. McCurdy.
Hens, 4.—1st and 2nd, C. A. R. Tilt; 3rd, R. McCurdy.
Cockerels, 5.—1st and 3rd, R. McCurdy; 2nd, C. A. R. Tilt.
Pullets, 10.—1st and 3rd, C. A. R. Tilt; 2nd, R. McCurdy.

A. O. C. Langshans.

Cocks, 2.—1st and 2nd, L. Ridler.
Hens, 3.—1st, 2nd, and 3rd, L. Ridler.
Cockerels, 3.—1st, 2nd, and 3rd, L. Ridler.
Pullets, 3.—1st, 2nd, and 3rd, L. Ridler.

Barred Plymouth Rocks.

Cocks, 23.—1st, 4th, and 5th, I. K. Millard; 2nd and 3rd, John Pringle.
Hens, 22.—1st and 3rd, I. K. Millard; 2nd and 5th, John Pringle; 4th, Chas. Hockin.
Cockerels, 38.—1st, Chas. Hall & Son; 2nd, 3rd, 7th, and 8th, I. K. Millard; 4th, John Pringle; 5th, and 6th, Chas. Hockin; 9th, John Bedford; 10th, Elias Snyder.
Pullets, 40.—1st, 6th, and 9th, John Pringle; 2nd and 5th, Chas. Hockin; 3rd and 8th, I. K. Millard; 4th, Geo. F. Holden; 7th, Jas. Hodge; 10th, Leslie Kerns.

WHITE PLYMOUTH ROCKS.

Cocks, 24.—1st, 3rd, and 5th, John L. Brown; 2nd, J. A. Carroll; 4th, Thos. Rice.
Hens, 35.—1st, C. J. Whitney; 2nd, Wm. E. Hoggarth; 3rd, 4th and 5th, Geo. A. Robertson; 6th, 9th, and 10th, John L. Brown; 7th, Gilbert Allen; 8th, J. A. Carroll.
Cockerels, 34.—1st and 8th, Wm. E. Hoggarth; 2nd and 9th, John L. Brown; 3rd, Fred. A. Andrewes; 4th, 6th, 7th, and 10th, Geo. A. Robertson.
Pullets, 40.—1st, 3rd, 4th, and 7th, Geo. A. Robertson; 2nd and 9th, John L. Brown; 5th, Guy Bell; 6th, Geo. E. Munroe; 8th, Thos. Rice; 10th, F. A. Andrewes.

BUFF PLYMOUTH ROCKS.

Cocks, 3.—1st and 3rd, John Bawden; 2nd, J. M. Campbell.
Hens, 3.—1st and 2nd, John Bawden; 3rd, J. M. Campbell.
Cockerels, 6.—1st and 3rd, John Bawden; 2nd, J. M. Campbell.
Pullets, 5.—1st and 2nd, John Bawden; 3rd, J. M. Campbell.

GOLDEN LACED WYANDOTTES.

Cocks, 13.—1st, Jas. Ford & Son; 2nd, John MacPherson; 3rd and 4th, J. H. Magill.
Hens, 9.—1st and 3rd, J. H. Magill; 2nd, John MacPherson.
Cockerels, 15.—1st, Peep O'Day Poultry Farm; 2nd and 4th, J. H. Magill; 3rd, Wm. Daniel.
Pullets, 16.—1st, J. H. Magill; 2nd, John MacPherson; 3rd, A. W. Graham; 4th, Wm. Daniel.

SILVER LACED WYANDOTTES.

Cocks, 13.—1st, Peep O'Day Poultry Farm; 2nd, Maple Leaf Poultry Yards; 3rd, Alfred Flawn.
Hens, 17.—1st, Hintonburg Poultry Yards; 2nd, Jas. Arthur; 3rd, Peep O'Day Poultry Farm; 4th, Wm. Daniel.
Cockerels, 18.—1st, Wilbur Lemon; 2nd and 3rd, Alfred Flawn; 4th, J. E. Moyer.
Pullets, 20.—1st, 2nd, and 3rd, Hintonburg Poultry Yards; 4th, Peep O'Day Poultry Farm; 5th, Alfred Flawn.

BLACK WYANDOTTES.

Cocks, 6.—1st, G. & J. Bogue; 2nd, R. Dinner; 3rd, Joe. R. Smith.
Hens, 8.—1st, R. Dinner; 2nd, G. & J. Bogue; 3rd, A. & T. Readwin.
Cockerels, 4.—1st, Joe R. Smith; 2nd, Wilbert Levan; 3rd, Joe R. Smith.
Pullets, 9.—1st and 3rd, Joe R. Smith; 2nd, A. & T. Readwin.

BUFF WYANDOTTES.

Cocks, 6.—1st, Spry & Mick; 2nd, J. C. Sanderson; 3rd, Jas. Dundas.
Hens, 9.—1st, J. Hughes Samuel; 2nd, Geo. Elliott & Co.. 3rd, J. C Sanderson.
Cockerels, 7.—1st, Spry & Mick; 2nd, Jas. Dundas; 3rd, J. C. Sanderson.
Pullets, 19.—1st, J. C. Sanderson; 2nd, Spry & Mick; 3rd, C. M. Taylor; 4th, J. Hughes Samuel.

SILVER PENCILLED WYANDOTTES.

Cocks, 4.—1st, C. M. Evans; 2nd, Rev. W. N. Scott; 3rd, Erhard Loehr.
Hens, 4.—1st, Rev. W. N. Scott; 2nd, Erhard Loehr; 3rd, C. M. Evans
Cockerels, 2.—1st, Robt. Patterson; 2nd, C. M. Evans.
Pullets, 5.—1st and 2nd, C. M. Evans; 3rd, Robt. Patterson.

WHITE WYANDOTTES.

Cocks, 36.—1st, 2nd, 3rd, and 9th, John S. Martin; 4th, Norman McLeod; 5th and 8th, A. Devitt; 6th, J. A. Carroll; 7th, W. Dawson; 10th, J. H. Traplin.
Hens, 51.—1st, 2nd, 9th and 10th, John S. Martin; 3rd and 4th, Jos. Russell; 5th, Chas. Massie; 6th, J. A. Carroll; 7th, Norman McLeod; 8th, W. Dawson.
Cockerels, 62.—1st, 2nd and 6th, John S. Martin; 3rd, Wm. Archer; 4th, Chas. Massie; 5th, Jos. Russell; 7th, W. Dawson; 8th, J. A. Carroll; 9th, Wm. Wilson; 10th, Norman McLeod.
Pullets, 67.—1st, 2nd, 3rd, and 9th, John S. Martin; 4th and 6th, Norman McLeod; 5th, Chas. Massie; 7th and 10th, W. Dawson; 8th, Wm. Archer.

PARTRIDGE WYANDOTTES.

Cocks, 7.—1st, F. T. Adams; 2nd, J. E. Fidler; 3rd, A. Goebel.
Hens, 8.—1st and 3rd, J. E. Fidler; 2nd, F. T. Adams.
Cockerels, 12.—1st and 2nd, F. T. Adams; 3rd, G. Wilson Grieve; 4th, Peter P. Becker.
Pullets, 15.—1st and 3rd, S. Rundle; 2nd, G. Wilson Grieve; 4th, Peter P. Becker.

COLUMBIAN WYANDOTTES.

Cocks, 11.—1st and 2nd, T. H. Scott; 3rd, Jas. C. Montgomery.
Hens, 17.—1st and 4th, W. Dawson; 2nd, R. C. Middlemiss; 3rd, T. H. Scott.
Cockerels, 20.—1st and 4th, T. H. Scott; 2nd, W. Dawson; 3rd and 5th, Schelly Bros.
Pullets, 24.—1st, 2nd, and 4th, Schelly Bros.; 3rd and 5th, T. H. Scott.

DOMINIQUE.

Cocks, 3.—1st, G. B. Carbert; 2nd, E. Syer; 3rd, A. G. H. Luxton.
Hens, 4.—1st, Geo. Burn; 2nd, G. B. Carbett; 3rd, A. G. H. Luxton.
Cockerels, 4.—1st, E. Syer; 2nd, Geo. Burn; 3rd, G. B. Carbett.
Pullets, 3.—1st, G. B. Carbett; 2nd, E. Syer.

BLACK JAVAS.

Cocks, 3.—1st, Richard Oke; 2nd, J. H. Warrington; 3rd, F. W. Krouse.
Hens, 5.—1st, Richard Oke; 2nd and 3rd, Clayton Witler.
Cockerels, 6.—1st, Richard Oke; 2nd, G. & J. Bogue; 3rd, Clayton Witler.
Pullets, 8.—1st and 2nd, G. & J. Bogue; 3rd, J. H. Warrington.

MOTTLED JAVAS.

Cocks, 2.—1st, J. & G. Bogue; 2nd, Richard Oke.
Hens, 2.—1st, G. & J. Bogue; 2nd, Richard Oke.
Cockerels, 1.—1st, Richard Oke.
Pullets, 1.—1st, G. & J. Bogue.

S. C. RHODE ISLAND REDS.

Cocks, 8.—1st, Wm. J. Mihm; 2nd, John E. Klager; 3rd, E. Wankel & Son.
Hens, 8.—1st and 3rd, Wm. J. Mihm; 2nd, E. Wankel & Son.
Cockerels, 23.—1st, E. Wankel & Son; 2nd and 5th, Hughes & Taylor; 3rd, Wm. J. Mihm; 4th, Anthony R. Gendron.
Pullets, 22.—1st and 3rd, Hughes & Taylor; 2nd, E. Wankel & Son; 4th and 5th, Wm. J. Mihm.

R. C. RHODE ISLAND REDS.

Cocks, 11.—1st, and 2nd, Emil Wankel & Son; 3rd, A. W. Graham.
Hens, 7.—1st, Emil Wankel & Son; 2nd, John Lundy; 3rd, Hughes & Taylor.
Cockerels, 11.—1st, A. W. Graham; 2nd, Hughes & Taylor; 3rd, Emil Wankel & Son.
Pullets, 12.—1st and 2nd, Hughes & Taylor; 3rd, A. W. Graham; 4th, Richard Tew.

BLACK RED GAMES.

Cocks, 11.—1st and 3rd, S. Stapleford; 2nd, A. J. Grigg.
Hens, 12.—1st, W. J. Elliott; 2nd, S. Stapleford; 3rd, J. W. Roberts; 4th, Frank Cook & Son.
Cockerels, 8.—1st, W. J. Elliott; 2nd, Thos. Parrott; 3rd, J. W. Roberts.
Pullets, 10.—1st, J. W. Roberts; 2nd and 3rd, Thos. Parrott.

BROWN RED GAMES.

Hens, 1.—1st, W. Barber.
Pullets, 2.—1st and 2nd, W. Barber.

Duckwing Games.

Cocks, 2.—1st and 2nd, W. Barber.
Hens, 3.—1st, and 2nd, W. Barber,; 3rd, Frank Cook & Son.
Cockerels, 4.—1st and 3rd, Frank Cook & Son; 2nd, W. Barber.
Pullets, 2.—1st and 2nd, W. Barber.

Pyle Games.

Cocks, 3.—1st, W. Barber; 2nd and 3rd, J. W. Parkinson.
Hens, 4.—1st and 2nd, J. W. Parkinson; 3rd, W. Barber.
Cockerels, 8.—1st, 2nd and 3rd, J. W. Parkinson.
Pullets, 6.—1st, 2nd, and 3rd, J. W. Parkinson.

Indian Games, Any Variety.

Cocks, 5.—1st, Finchamp & Topping; 2nd, Will Casey; 3rd, E. Syer.
Hens, 5.—1st, Will Casey; 2nd, Stephen Sellers; 3rd, Finchamp & Topping.
Cockerels, 8.—1st, E. Syer; 2nd and 3rd, Finchamp & Topping.
Pullets, 8.—1st and 2nd, Finchamp & Topping; 3rd, John Handley.

Black Sumatra Games.

Cocks, 4.—1st, E. Saunders; 2nd and 3rd, Frank Shaw.
Hens, 4.—1st and 2nd, Frank Shaw; 3rd, E. Saunders.
Cockerels, 5.—1st, Frank Shaw; 2nd, E. Saunders; 3rd, C. J. Daniel.
Pullets, 6.—1st, C. J. Daniel; 2nd, Frank Shaw; 3rd, E. Saunders.

Birchen Games.

Hens, 1.—1st, Geo. Burn.
Cockerels, 1.—1st, W. Barber.
Pullets, 2.—1st and 2nd, W. Barber.

A. O. V. Games.

Cocks, 3.—1st, Wm. Smith; 2nd, F. W. Krouse; 3rd, Geo. Burn.
Hens, 3.—1st and 2nd, Geo. Burn; 3rd, F. W. Krouse.
Cockerels, 4.—1st, Fred. Bunt; 2nd, L. Ridler; 3rd, Geo. Burn.
Pullets, 3.—1st, F. W. Krouse; 2nd, Geo. Burn; 3rd, Fred. Bunt.

R. C. White Leghorns.

Cocks, 10.—1st, Irvin K. Martin; 2nd, Wm. Telfer; 3rd, Jas. Snetsinger.
Hens, 9.—1st, M. R. Hoover; 2nd, A. & T. Readwin; 3rd, Wm. Telfer.
Cockerels, 14.—1st, M. R. Hoover; 2nd, A. McLeod; 3rd and 4th, W. J. Bell.
Pullets, 17.—1st and 4th, W. J. Bell; 2nd, Wm. Telfer; 3rd, A. & T. Readwin.

S. C. White Leghorns.

Cocks, 9.—1st and 2nd, Wm. Ferguson; 3rd, E. Syer.
Hens, 12.—1st and 4th, Wm. Ferguson; 2nd, Durst Bros.; 3rd, Jos. Harrison.
Cockerels, 20.—1st and 3rd, Wm. Ferguson; 2nd and 5th, F. Wales; 4th, Wm. E. Hoggarth.
Pullets, 25.—1st and 2nd, F. Wales; 3rd and 5th, Wm. Ferguson; 4th, Durst Bros.

Black Leghorns.

Cocks, 6.—1st and 3rd, A. E. Doan; 2nd, F. W. Hodgkin.
Hens, 13.—1st and 4th, A. E. Doan; 2nd, Geo. Burn; 3rd, J. H. Edsall.
Cockerels, 11.—1st, W. J. McLeod; 2nd, F. H. Gallinger; 3rd, A. E. Doan.
Pullets, 16.—1st, W. J. McLeod; 2nd and 4th, A. E. Doan; 3rd, F. H. Gallinger.

R. C. Brown Leghorns.

Cocks, 8.—1st, Wm. Cadman; 2nd, C. H. Wilson; 3rd, Henderson & Billings.
Hens, 7.—1st and 2nd, C. H. Wilson; 3rd, Henderson & Billings.
Cockerels, 10.—1st and 2nd, Henderson & Billings; 3rd, C. H. Wilson.
Pullets, 14.—1st and 2nd, Wm. Cadman; 3rd, E. Saunders; 4th, Fred Bunt.

S. C. Brown Leghorns.

Cocks, 15.—1st, Jas. S. McDairmid; 2nd, H. F. Becker; 3rd, Jacob Streib; 4th, A. J. Engel.
Hens, 18.—1st and 5th, W. A. Gurney; 2nd, Jacob Streib; 3rd, Jas. Snetsinger; 4th, H. F. Becker.
Cockerels, 41.—1st, W. A. Gurney; 2nd, A. J. Engel; 3rd, 6th, 9th, and 10th, H. F. Becker; 4th and 8th, Jacob Streib; 5th, John Handley; 7th, Peter Scott.
Pullets, 25.—1st, W. A. Gurney; 2nd and 4th, Orr & Creedon; 3rd, H. F. Becker; 5th, Harvey B. Yakes.

Buff Leghorns.

Cocks, 7.—1st and 3rd, Nate K. Cornwall; 2nd, E. Jeffries.
Hens, 8.—1st and 2nd, Nate K. Cornwall; 3rd, Jas. Dundas.
Cockerels, 11.—1st and 3rd, Nate K. Cornwall; 2nd, R. B. Graham.
Pullets, 13.—1st, R. B. Graham; 2nd, 3rd and 4th, Nate K. Cornwall.

Spanish.

Cocks, 2.—1st, G. & J. Bogue; 2nd, J. H. Warrington.
Hens, 3.—1st, J. H. Warrington; 2nd, G. & J. Bogue; 3rd, Stephen Sellers.
Cockerels, 3.—1st and 2nd, G. & J. Bogue; 3rd, J. H. Warrington.
Pullets, 3.—1st, J. H. Warrington; 2nd and 3rd, G. & J. Bogue.

S. C. Black Minorcas.

Cocks, 7.—1st and 3rd, T. A. Faulds; 2nd, Chas. Gorvett.
Hens, 17.—1st, 2nd, and 3rd, Henry Dunne; 4th, Jos. Harrison.
Cockerels, 17.—1st, 2nd, and 4th, T. A. Faulds; 3rd W. J. Elliott.
Pullets, 15.—1st and 4th, T. A. Faulds; 2nd, Henry Dunne; 3rd, G. C. Cook.

R. C. Black Minorcas.

Cocks, 8.—1st, T. A. Faulds; 2nd, B. J. Mountjoy; 3rd, Dr. J. N. MacRae.
Hens, 7.—1st and 2nd, T. A. Faulds; 3rd, T. H. Scott.
Cockerels, 7.—1st, 2nd, and 3rd. T. A. Faulds.
Pullets, 8.—1st, 2nd, and 3rd, T. A. Faulds.

White Minorcas.

Cocks, 2.—1st, A. C. Moyer; 2nd, J. C. Read.
Hens, 4.—1st, J. C. Read; 2nd and 3rd. A. C. Moyer.
Cockerels, 5.—1st. A. C. Moyer; 2nd and 3rd, Thos. Vickers.
Pullets, 6.—1st and 3rd, A. C. Moyer; 2nd, Thos. Vickers.

Andalusians.

Cocks, 7.—1st, H. V. Cosh; 2nd and 3rd, G. T. Howard.
Hens, 10.—1st and 2nd, H. V. Cosh; 3rd, Adolph Smith.
Cockerels, 6.—1st, H. V. Cosh; 2nd, Chas. Gorvett; 3rd, G. T. Howard.
Pullets, 6.—1st and 3rd, Chas. Gorvett; 2nd, G. T. Howard.

Silver Grey Dorkings.

Cocks, 9.—1st, Gordon A. Burns; 2nd, Harry McKee; 3rd, Wallace McGlennon.
Hens, 14.—1st, Jas. M. McCormack, 2nd, Wallace McGlennon; 3rd, F. W. Krouse; 4th, Gordon A. Burns.
Cockerels, 6.—1st and 3rd. Gordon A. Burns; 2nd, Jas. M. McCormack.
Pullets, 7.—1st and 2nd, Gordon A. Burns; 3rd, Jas. M. McCormack.

Colored Dorkings.

Cocks, 3.—1st, Jas. M. McCormack; 2nd, J. H. Warrington; 3rd, G. & J. Bogue.
Hens, 3.—1st, G. & J. Bogue; 2nd, Jas. M. McCormack; 3rd, J. H. Warrington.
Cockerels, 3.—1st, Jas. M. McCormack; 2nd and 3rd, G. & J. Bogue.
Pullets, 4.—1st and 2nd, Jas. McCormack; 3rd, G. & J. Bogue.

White Dorkings.

Cocks, 3.—1st and 2nd, Jas. M. McCormack; 3rd, J. H. Warrington.
Hens, 3.—1st, Geo. Burn; 2nd, J. H. Warrington; 3rd, Jas. M. McCormack.
Cockerels, 4.—1st, Jas. M. McCormack; 2nd, Geo. Burn; 3rd, J. H. Warrington.
Pullets, 4.—1st and 2nd, Jas. M. McCormack; 3rd, Geo. Burn.

Buff Orpingtons.

Cocks, 17.—1st, P. E. Aird; 2nd and 3rd, A. W. E. Hellyer; 4th, H. A. Hoffman.
Hens, 22.—1st and 3rd, Robert Barnes; 2nd and 4th, A. W. E. Hellyer; 5th, P. E Aird.
Cockerels, 47.—1st, 2nd, 3rd, and 6th, H. A. Hoffman; 4th, 7th, and 8th, A. W. E. Hellyer; 5th and 10th, John Bawden; 9th, P. J. McEwen.
Pullets, 41.—1st, 4th, and 5th, A. W. E. Hellyer; 2nd and 10th, H. A. Hoffman; 3rd, Robert Barnes; 6th, Milne & Cavanagh; 7th, John Bawden; 8th, Harry T. Lush; 9th, C. C. Abbott.

Black Orpingtons.

Cocks, 13.—1st and 2nd, H. A. Hoffman; 3rd, Kemp & Waterman; 4th, E. Fraleigh.
Hens, 13.—1st, 3rd, and 4th, E. Fraleigh; 2nd, C. J. Daniels.
Cockerels, 23.—1st, H. A. Hoffman; 2nd, E. Fraleigh; 3rd, Richard Oke; 4th, Kemp & Waterman; 5th, Chester Scoyne.
Pullets, 28.—1st and 2nd, Kemp & Waterman; 3rd and 5th, H. A. Hoffman; 4th, E. Fraleigh.

White Orpingtons.

Cocks, 4.—1st, Jas. Snetsinger; 2nd, Gideon Peer; 3rd, Frank E. Bogart.
Hens, 10.—1st, 2nd, and 3rd, Moore Bros.
Cockerels, 7.—1st, 2nd, and 3rd, Moore Bros.
Pullets, 7.—1st, 2nd, and 3rd, Moore Bros.

Houdans.

Cocks, 4—1st, E. O. Penwarden; 2nd, Geo. Elliott & Co.; 3rd, McIntosh & Halliday.
Hens, 4—1st, E. O. Penwarden; 2nd, G. & J. Bogue; 3rd, Geo. Elliott & Co.
Cockerels, 6—1st and 2nd, G. & J. Bogue; 3rd, McIntosh & Halliday.
Pullets, 8—1st and 2nd, G. & J. Bogue; 3rd, E. O. Penwarden.

Creve Coeurs.

Cocks, 1—1st, G. & J. Bogue.
Hens, 3—1st, G. & J. Bogue; 2nd, J. H. Warrington; 3rd, Richard Oke.
Cockerels, 2—1st, Richard Oke; 2nd, G. & J. Bogue.
Pullets, 2—1st, G. & J. Bogue.

La Fleche.

Cocks, 3—1st, G. & J. Bogue; 2nd, J. H. Warrington; 3rd, Richard Oke.
Hens, 3—1st, G. & J. Bogue; 2nd, J. H. Warrington; 3rd, Richard Oke.
Cockerels, 2—1st, Richard Oke; 2nd, G. & J. Bogue.
Pullets, 2—1st, G. & J. Bogue; 2nd, Richard Oke.

W. C. B. Polands.

Cocks, 3—1st, Wm. McNeil; 2nd and 3rd, J. Alvin Small.
Hens, 2—1st and 2nd, Wm. McNeil.
Cockerels, 2—1st and 2nd, Wm. McNeil.
Pullets, 2—1st and 2nd, Wm. McNeil.

Golden Polands.

Cocks, 3—1st and 3rd, Wm. McNeil; 2nd, G. & J. Bogue.
Hens, 3—1st, G. & J. Bogue; 2nd and 3rd, Wm. McNeil.
Cockerels, 2—1st, G. & J. Bogue; 2nd, Wm. McNeil.
Pullets, 3—1st and 2nd, Wm. McNeil; 3rd, G. & J. Bogue.

Silver Polands.

Cocks, 4—1st, G. & J. Bogue; 2nd and 3rd, Wm. McNeil.
Hens, 4—1st and 2nd, Wm. McNeil; 3rd, Geo. Burn.
Cockerels, 4—1st and 2nd, Wm. McNeil; 3rd, G. & J. Bogue.
Pullets, 4—1st and 3rd, Wm. McNeil; 2nd, G. & J. Bogue.

White Polands.

Cocks, 1—1st, Wm. McNeil.
Hens, 2—1st and 2nd, Wm. McNeil.
Cockerels, 1.—1st, Wm. McNeil.
Pullets, 2—1st and 2nd, Wm. McNeil.

Golden Bearded Polands.

Cocks, 3—1st, Wm. McNeil; 2nd, G. & J. Bogue; 3rd, J. Alvin Small.
Hens, 4—1st, J. Alvin Small; 2nd and 3rd, Wm. McNeil.
Cockerels, 3—1st, G. & J. Bogue; 2nd and 3rd, Wm. McNeil.
Pullets, 3—1st and 3rd, Wm. McNeil; 2nd, G. & J. Bogue.

Silver Bearded Polands.

Cocks, 3—1st and 2nd, Wm. McNeil; 3rd, G. & J. Bogue.
Hens, 3—1st and 2nd, Wm. McNeil; 3rd, G. & J. Bogue.
Cockerels, 3—1st and 2nd, Wm. McNeil; 3rd, G. & J. Bogue.
Pullets, 3—1st and 2nd, Wm. McNeil; 3rd, G. & J. Bogue.

White Bearded Polands.

Cocks, 2—1st and 2nd, Wm. McNeil.
Hens, 2—1st and 2nd, Wm. McNeil.
Cockerels, 2—1st and 2nd, Wm. McNeil.
Pullets, 2—1st and 2nd, Wm. McNeil.

Buff Laced Polands.

Cocks, 3—1st and 3rd, Wm. McNeil; 2nd, G. & J. Bogue.
Hens, 3—1st, G. & J. Bogue; 2nd and 3rd, Wm. McNeil.
Cockerels, 2—1st, G. & J. Bogue; 2nd, Wm. McNeil.
Pullets, 3—1st and 2nd, Wm. McNeil; 3rd, G. & J. Bogue.

Golden Spangled Hamburgs.

Cocks, 3—1st, G. & J. Bogue; 2nd, Richard Oke; 3rd, Jas. Baptie.
Hens, 4—1st, 2nd, and 3rd, Jas. Baptie.
Cockerels, 4—1st and 2nd, Richard Oke; 3rd, Jas. Baptie.
Pullets, 2—1st, Richard Oke; 2nd, Jas. Baptie.

Silver Spangled Hamburgs.

Cocks, 8—1st, Richard Oke; 2nd, Harry T. Lush; 3rd, Jas. Baptie.
Hens, 7—1st, Richard Oke; 2nd, Harry T. Lush; 3rd, Wm. Cadman.
Cockerels, 8—1st and 2nd, Richard Oke; 3rd, Jas. Baptie.
Pullets, 8—1st, Harry T. Lush, 2nd, Wm. Cadman; 3rd, Richard Oke

Golden Pencilled Hamburgs.

Cocks, 2—1st, Richard Oke; 2nd, John Ballantyne.
Hens, 2—1st, Richard Oke; 2nd, Wm. Carter.
Cockerels, 3—1st and 3rd, Richard Oke; 2nd, Wm. Carter.
Pullets, 5—1st and 2nd, Richard Oke; 3rd, Wm. Carter.

Silver Pencilled Hamburgs.

Cocks, 3—1st, Wm. Carter; 2nd and 3rd, Richard Oke.
Hens, 3—1st and 2nd, Richard Oke; 3rd, Wm. Carter.
Cockerels, 3—1st and 2nd, Richard Oke; 3rd, Wm. Carter.
Pullets 3—1st and 3rd, Richard Oke; 2nd, Wm. Carter.

Black Hamburgs.

Cocks, 7—1st, R. L. Wheadon; 2nd, W. G. Murray; 3rd, Richard Oke.
Hens, 7—1st, W. F. Coote; 2nd and 3rd, Richard Oke.
Cockerels, 7—1st and 2nd, Richard Oke; 3rd, R. L. Wheadon.
Pullets, 8—1st, R. L. Wheadon; 2nd, Richard Oke; 3rd, Harry T. Lush.

Red Caps.

Cocks, 4—1st and 2nd, Geo. W. Kinder.
Hens, 4—1st and 2nd, Geo. W. Kinder; 3rd, Wells Bros.
Cockerels, 6—1st, Wells Bros.; 2nd, W. E. Wright; 3rd, Geo. W. Kinder.
Pullets, 7—1st and 3rd, Wells Bros.; 2nd, W. E. Wright.

Sultans.

Cocks, 2—1st, G. & J. Bogue; 2nd, Richard Oke.
Hens, 2—1st, Richard Oke; 2nd. G. & J. Bogue.
Cockerels, 1—1st, Richard Oke.
Pullets, 2—1st and 2nd, Richard Oke.

Silkies.

Cocks, 5—1st and 2nd, E. Saunders; 3rd, H. B. Donovan.
Hens, 6—1st H. B. Donovan; 2nd, E. Saunders; 3rd, John Innes.
Cockerels, 6—1st, E. Saunders; 2nd, John Innes; 3rd, H. B. Donovan.
Pullets, 7—1st and 3rd, E. Saunders; 2nd, John Innes.

A. O. V. Fowl.

Cocks, 7—1st, Peter P. Becker; 2nd, Jack Philpot; 3rd, F. H. & P. L. Greer.
Hens, 9—1st, Geo. Burn; 2nd and 3rd, Peter P. Becker.
Cockerels, 7—1st, Peter P. Becker; 2nd, Rev. W. N. Scott; 3rd, Adolph Smith.
Pullets, 9—1st and 3rd, Peter P. Becker, 2nd, Rev. W. N. Scott.

Black Red Game Bantams.

Cocks, 9—1st, W. R. Walker; 2nd, Chas. R. Crowe; 3rd, Rook Bros.
Hens, 10—1st and 3rd, W. R. Walker; 2nd, Chas. R. Crowe.
Cockerels, 9—1st, W. R. Walker; 2nd, Chas. R. Crowe; 3rd, Thos. Sherlock.
Pullets, 16—1st, 3rd and 4th, Chas. R. Crowe; 2nd, W. R. Walker.

Brown Red Game Bantams.

Cocks, 7—1st, W. R. Walker; 2nd, Thos. Sherlock; 3rd, W. Barber.
Hens, 12—1st, Thos. Sherlock; 2nd, W. R. Walker; 3rd, W. Barber; 4th, W. Pearson.
Cockerels, 7—1st, W. Barber; 2nd, J. A. Harper; 3rd, W. R. Walker.
Pullets, 10—1st, W. Barber; 2nd and 3rd, W. R. Walker.

Duckwing Game Bantams.

Cocks, 5—1st, W. Barber; 2nd, Chas. R. Crowe; 3rd, Thos. Sherlock.
Hens, 8.—1st, Chas. R. Crowe; 2nd and 3rd, Spieres Bros.
Cockerels, 7.—1st and 2nd, Spieres Bros.; 3rd, Chas. R. Crowe.
Pullets, 8.—1st, Spieres Bros.; 2nd, Chas. R. Crowe; 3rd, Thos. Sherlock.

Pyle Game Bantams.

Cocks, 8—1st, John Crowe; 2nd, Tyson & McMaster; 3rd, Thos. Bower.
Hens, 12—1st, Tyson & McMaster; 2nd, W. Barber; 3rd, Thos. Bower; 4th, John Crowe.
Cockerels, 15—1st, 3rd and 4th, Thos. Bower; 2nd, John Crowe.
Pullets, 20—1st, W. Barber; 2nd, 3rd, and 4th, Thos. Bower; 5th, Tyson & McMaster.

White Game Bantams.

Cocks, 2—1st and 2nd, H. B. Donovan.
Hens, 3—1st, 2nd and 3rd, H. B. Donovan.
Cockerels, 3—1st, 2nd and 3rd, H. B. Donovan.
Pullets, 3—1st, 2nd and 3rd, H. B. Donovan.

Birchen Game Bantams.

Cocks, 3—1st, H. B. Donovan; 2nd, Rook Bros.; 3rd, J. E. Bailey.
Hens, 7—1st, W. Pearson; 2nd, Tyson & McMaster; 3rd, H. B. Donovan.
Cockerels, 5—1st, 2nd, and 3rd, Rook Bros.
Pullets, 6—1st, Rook Bros.; 2nd and 3rd, W. Pearson.

Indian Game Bantams.

Cocks, 4—1st, W. G. Murray; 2nd and 3rd, Doidge & McNeil.
Hens, 5—1st, T. J. Kiley; 2nd, Doidge & McNeil; 3rd, Alfred Flawn.
Cockerels, 3—1st, Doidge & McNeil; 2nd, T. J. Kiley; 3rd, H. B. Donovan.
Pullets, 4—1st and 2nd, Doidge & McNeil; 3rd, T. J. Kiley.

A. O. V. Game Bantams.

Cocks, 5—1st, P. E. Aird; 2nd, J. V. MacAree; 3rd, H. B. Donovan.
Hens, 4—1st, P. E. Aird; 2nd, Geo. Burn; 3rd, H. B. Donovan.
Cockerels, 2—1st and 2nd, H. B. Donovan.
Pullets. 9—1st, Rook Bros.; 2nd, W. R. Walker; 3rd, Chas. R. Crowe.

Golden Sebright Bantams.

Cocks, 7—1st, Richard Oke 2nd, G. & H. Poole; 3rd, W. G. Murray.
Hens, 7—1st, Richard Oke; 2nd, W. G. Murray; 3rd, T. J. Kiley.
Cockerels. 7—1st, and 3rd, T. J. Kiley; 2nd, W. G. Murray.
Pullets. 8—1st, Richard Oke; 2nd, W. G. Murray; 3rd, W. J. Slessor.

Silver Sebright Bantams.

Cocks, 11—1st, Richard Oke; 2nd and 3rd, W. G. Murray.
Hens, 10—1st, Richard Oke; 2nd and 3rd, T. J. Kiley.
Cockerels. 8—1st and 2nd, Richard Oke; 3rd, L. Austin Brill.
Pullets, 7—1st and 3rd, Richard Oke; 2nd, L. Austin Brill.

Black Rose Comb Bantams.

Cocks, 12—1st, Richard Oke; 2nd, W. J. Slessor; 3rd, W. G. Murray; 4th, R. L. Wheadon.
Hens, 11—1st, W. G. Murray; 2nd and 3rd, R. L. Wheadon.
Cockerels, 14—1st, Richard Oke; 2nd and 4th, R. L. Wheadon; 3rd, W. G. Murray.
Pullets, 14—1st and 3rd, R. L. Wheadon; 2nd, Richard Oke; 4th, W. J. Sleesor.

White Rose Comb Bantams.

Cocks, 6—1st and 2nd, W. G. Murray; 3rd, H. B. Donovan.
Hens, 7—1st, Richard Oke; 2nd and 3rd, H. B. Donovan.
Cockerels, 9—1st, W. G. Murray; 2nd, L. Austin Brill; 3rd, R. L. Wheadon.
Pullets, 10—1st, Richard Oke; 2nd and 3rd, W. G. Murray.

White Cochin Bantams.

Cocks, 8—1st, W. J. Teale; 2nd, Doidge & McNeil; 3rd, Joe. R. Smith.
Hens, 10—1st, Joe. R. Smith; 2nd, Doidge & McNeil; 3rd, Dr. J. N. MacRae.
Cockerels, 5—1st, 2nd, and 3rd, Doidge & McNeil.
Pullets, 4—1st, 2nd, and 3rd, Doidge & McNeil.

Buff Cochin Bantams.

Cocks, 6—1st, Richard Oke; 2nd, and 3rd, Rosser Bros.
Hens, 8—1st, 2nd and 3rd, Rosser Bros.
Cockerels, 11—1st, Rosser Bros.; 2nd, J. A. Northey; 3rd, Doidge & McNeil.
Pullets, 11—1st, Rosser Bros.; 2nd, J. A. Northey; 3rd, Richard Oke.

Black Cochin Bantams.

Cocks, 14—1st, C. A. R. Tilt; 2nd and 3rd, Doidge & McNeil; 4th, Dr. J. N. MacRae.
Hens, 16—1st, Rosser Bros.; 2nd, H. Freleigh; 3rd, Doidge & McNeil; 4th, Dr. J. N. MacRae.
Cockerels, 15—1st, H. Fraleigh; 2nd and 3rd, W. J. Slessor; 4th, Doidge & McNeil.
Pullets, 16—1st and 3rd, W. J. Slessor; 2nd, H. Fraleigh; 4th, Joe. R. Smith.

Partridge Cochin Bantams.

Cocks, 6—1st, W. G. Murray; 2nd, L. Austin Brill; 3rd, Wm. Cadman.
Hens, 6—Wm. Cadman; 2nd, W. G. Murray; 3rd, L. Austin Brill.
Cockerels, 7—1st, Hugh Wyatt; 2nd, L. Austin Brill; 3rd, W. Pearson.
Pullets, 6—1st, Hugh Wyatt; 2nd, L. Austin Brill; 3rd, H. B. Donovan.

White Booted Bantams.

Cocks, 3—1st, W. J. Teale; 2nd, W. G. Murray; 3rd, T. J. Kiley.
Hens, 6—1st, W. J. Teale; 2nd and 3rd, T. J. Kiley.
Cockerels, 5—1st, and 3rd, W. G. Murray; 2nd, T. J. Kiley.
Pullets, 6—1st, T. J. Kiley; 2nd and 3rd, W. G. Murray.

Japanese Black-tailed Bantams.

Cocks, 4—1st, Richard Oke; 2nd, W. G. Murray; 3rd, T. J. Kiley.
Hens, 6.—1st and 3rd, Richard Oke; 2nd, W. G. Murray.
Cockerels, 4—1st and 3rd, W. G. Murray; 2nd, T. J. Kiley.
Pullets, 4—1st and 2nd, W. G. Murray; 3rd, T. J. Kiley.

Japanese White Bantams.

Cocks, 4—1st, Richard Oke; 2nd, W. G. Murray; 3rd, H. B. Donovan.
Hens, 4—1st, Richard Oke; 2nd, H. B. Donovan; 3rd, W. G. Murray.
Cockerels, 3—1st, Richard Oke; 2nd and 3rd, W. G. Murray.
Pullets, 3—1st, Richard Oke; 2nd and 3rd, W. G. Murray.

Black Japanese Bantams.

Cocks, 4—1st, Richard Oke; 2nd, W. G. Murray; 3rd, H. B. Donovan.
Hens, 5—1st, H. B. Donovan; 2nd, W. G. Murray; 3rd, L. Austin Brill.
Cockerels, 4—1st, Richard Oke; 2nd, L. Austin Brill.
Pullets, 5—1st, Richard Oke; 2nd and 3rd, W. G. Murray.

A. O. V. Japanese Bantams.

Cocks, 5—1st and 3rd, W. G. Murray; 2nd, Richard Oke.
Hens, 6—1st, Richard Oke; 2nd and 3rd, W. G. Murray.
Cockerels, 5—1st, H. B. Donovan; 2nd, W. Dawson.
Pullets, 4—1st, H. B. Donovan; 2nd, Richard Oke.

Polish Bearded Bantams.

Cocks, 5—1st and 3rd, T. J. Kiley; 2nd, W. G. Murray.
Hens, 5—1st and 2nd, T. J. Kiley; 3rd, W. G. Murray.
Cockerels, 5—1st, T. J. Kiley; 2nd and 3rd, Richard Oke.
Pullets, 5—1st, Richard Oke; 2nd and 3rd, T. J. Kiley.

Unbearded Polish Bantams.

Cocks, 4—1st, H. B. Donovan; 2nd, W. G. Murray; 3rd, Richard Oke.
Hens, 5—1st, H. B. Donovan; 2nd, W. G. Murray; 3rd, Richard Oke.
Cockerels, 4—1st, H. B. Donovan; 2nd and 3rd, W. G. Murray.
Pullets, 5—1st and 2nd, H. B. Donovan; 3rd, W. G. Murray.

Brahma Bantams.

Cocks, 8—1st, J. M. Shaw; 2nd, R. T. Dickie; 3rd. H. W. Partlo.
Hens, 16—1st, H. W. Partlo; 2nd, R. T. Dickie; 3rd, J. M. Shaw; 4th, G. E. McIntosh.
Cockerels, 9—1st, G. E. McIntosh; 2nd, Jack Hewitt; 3rd, H. W. Partlo.
Pullets, 12—1st, G. E. McIntosh; 2nd, J. M. Shaw; 3rd and 4th, H. W. Partlo.

A. O. V. Bantams.

Cocks, 1—1st, H. B. Donovan.
Hens, 1—1st, H. B. Donovan.
Pullets, 1—1st, T. J. Kiley.

Bronze Turkeys, 2 Years and up.

Cocks, 4—1st, W. J. Bell; 2nd, Alfred C. Crane; 3rd, W. H. Beatty; 4th, T. Worrod.
Hens, 8—1st, Jas. Ford & Son; 2nd, 3rd and 5th, W. J. Bell; 4th, Cullis & Lean.

Bronze Turkeys, Under 2 Years.

Cocks, 7—1st and 2nd, W. J. Bell; 3rd, A. McDougall & Son; 4th, W. E. Wright; 5th, D. Douglas & Son.
Hens, 8—1st, Jas. Ford & Son; 2nd, A. McDougall & Son; 3rd and 4th, W. J. Bell; 5th, W. E. Wright.
Cockerels, 13—1st, 2nd and 3rd, W. J. Bell; 4th, Jas. Ford & Son; 5th, A. McDougall & Son.
Pullets, 12—1st, W. E. Wright; 2nd, Jas. Ford & Son; 3rd, 4th and 5th, W. J. Bell.

White Turkeys.

Cocks, 5—1st, Baker Bros.; 2nd and 3rd, W. H. Beatty; 4th and 5th, Geo. Baker.
Hens, 6—1st and 2nd, Baker Bros.; 3rd and 4th, W. H. Beatty; 5th, Geo. Baker.
Cockerels, 7—1st and 2nd, Baker Bros.; 3rd, A. McDougall & Son; 4th and 5th, Geo. Baker.
Pullets, 6—1st, A. McDougall & Son; 2nd and 3rd, Baker Bros.; 4th, W. H. Beatty; 5th, Geo. Baker.

A. O. V. Turkeys.

Cocks, 2—1st, W. J. Alexander; 2nd, A. G. H. Luxton.
Hens, 3—1st and 2nd, W. J. Alexander; 3rd, A. G. H. Luxton.
Cockerels, 2.—1st, A. G. H. Luxton; 2nd, W. J. Alexander.
Pullets, 2—1st, W. J. Alexander; 2nd, A. G. H. Luxton.

Toulouse Geese.

Ganders, 5—1st, Geo. Burn; 2nd and 3rd, D. Douglas & Son; 4th, Scanlon Bros.
Geese, 4—1st and 2nd, D. Douglas & Son; 3rd, Scanlon Bros; 4th, Thos. M. Shea.
Ganders, 1908, 7—1st and 2nd, D. Douglas & Son; 3rd, Jas. M. McCormack; 4th, Thos. M. Shea.
Geese, 1908, 8—1st and 2nd, D. Douglas & Son; 3rd, Jas. M. McCormack; 4th, Scanlon Bros.

Embden Geese.

Ganders, 6—1st, C. A. R. Tilt; 2nd, Baker Bros.; 3rd and 4th, A. McDougall & Son.
Geese, 6—1st, Scanlon Bros.; 2nd, C. A. R. Tilt; 3rd, A. McDougall & Son; 4th, Scanlon Bros.
Ganders, 1908, 4—1st, C. A. R. Tilt; 2nd, Baker Bros.; 3rd, A. McDougall & Son; 4th, Scanlon Bros.
Geese, 1908, 3—1st, Scanlon Bros.; 2nd, C. A. R. Tilt; 3rd, A. McDougall & Son.

Brown Chinese Geese.

Ganders, 3—1st, A. G. H. Luxton; 2nd, Geo. Burn; 3rd, G. B. Carbert.
Geese, 3—1st, Geo. Burn; 2nd, A. G. H. Luxton; 3rd, G. B. Carbert.
Ganders, 1908, 3—1st, C. A. R. Tilt; 2nd, G. B. Carbert.
Geese, 1908, 3—1st, C. A. R. Tilt; 2nd, G. B. Carbert.

African Geese.

Ganders, 5—1st, Baker Bros; 2nd, Geo. Burn; 3rd, C. A. R. Tilt.
Geese, 5—1st and 2nd, C. A. R. Tilt; 3rd, Geo. Burn.
Ganders, 1908, 2—1st, C. A. R. Tilt; 2nd, Baker Bros.
Geese, 1908, 2—1st, C. A. R. Tilt; 2nd, Baker Bros.

A. O. V. Geese.

Ganders, 4—1st, Geo. Burn; 2nd, A. G. H. Luxton; 3rd, Isaac T. Knight & Co.
Geese, 4—1st, Geo. Burn; 2nd, A. G. H. Luxton; 3rd, Isaac T. Knight & Co.
Ganders, 1908, 4—1st, Stephen Sellers; 2nd, A. G. H. Luxton; 3rd, Thos. M. Shea.
Geese, 1908, 4—1st, Stephen Sellers; 2nd, A. G. H. Luxton; 3rd, Thos. M. Shea.

Aylesbury Ducks.

Drakes, 5—1st, C. A. R. Tilt; 2nd and 3rd, G. & J. Bogue.
Ducks, 6—1st and 2nd, G. & J. Bogue; 3rd, C. A. R. Tilt.
Drakes, 1908, 3—1st and 3rd, G. & J. Bogue; 2nd, Stephen Sellers.
Ducks, 1908, 3—1st and 2nd, G. & J. Bogue; 3rd, Stephen Sellers.

Rouen Ducks.

Drakes, 6—1st, Baker Bros; 2nd, G. & J. Bogue; 3rd, Will Casey.
Ducks, 6—1st and 2nd, G. & J. Bogue; 3rd, Baker Bros.
Drakes, 1908, 5—1st and 2nd, Baker Bros.; 3rd, G. & J. Bogue.
Ducks, 1908, 7—1st and 2nd, G. & J. Bogue; 3rd, Baker Bros.

Pekin Ducks.

Drakes, 8—1st and 2nd, C. A. R. Tilt; 3rd, D. Douglas & Son.
Ducks, 7—1st and 2nd, C. A. R. Tilt; 3rd, D. Douglas & Son.
Drakes, 1908, 10—1st and 2nd, C. A. R. Tilt; 3rd, Wm. Collins.
Ducks, 1908, 9—1st and 2nd, C. A. R. Tilt; 3rd, Stephen Sellers.

Indian Runner Ducks.

Drakes, 4—1st, H. F. Wismer; 2nd and 3rd, S. D. Furminger.
Ducks, 4—1st, H. F. Wismer; 2nd and 3rd, S. D. Furminger.
Drakes, 1908, 5—1st and 2nd, S. D. Furminger; 3rd, H. F. Wismer.
Ducks, 1908, 5—1st and 2nd, S. D. Furminger; 3rd, H. F. Wismer.

Cayuga Ducks.

Drakes, 3—1st, G. & J. Bogue; 2nd, Isaac T. Knight & Co.
Ducks, 2—1st, Isaac T. Knight & Co.
Drakes, 1908, 3—1st and 2nd Isaac T. Knight & Co.
Ducks, 1908, 3—1st and 2nd, Isaac T. Knight & Co.

Muscovy Ducks.

Drakes, 3—1st and 2nd, Isaac T. Knight & Co.; 3rd, Geo. Burn.
Ducks, 3—1st, Geo. Burn; 2nd and 3rd, Isaac T. Knight & Co.
Drakes, 1908, 3—1st, C. A. R. Tilt; 2nd, Geo. Burn; 3rd, Isaac T. Knight & Co.
Ducks, 1908, 3—1st, Geo. Burn; 2nd, Isaac T. Knight & Co. 3rd, C. A. R. Tilt.

A. O. V. Ducks.

Drakes, 5—1st and 2nd, H. Karn; 3rd, H. B. Donovan.
Ducks, 5—1st and 3rd, H. Karn; 2nd, H. B. Donovan.
Drakes, 1908, 4—1st, and 2nd, H. Karn; 3rd, H. B. Donovan.
Ducks, 1908, 4—1st, H. B. Donovan; 2nd and 3rd, H. Karn.

PIGEONS.

Black Carrier.

Cocks, 3.—1st and 2nd, H. E. Limon.
Hens, 2—1st, H. E. Limon; 2nd, A. & T. Readwin.

Dun Carrier.

Cocks, 2—1st, H. E. Limon; 2nd, A. & T. Readwin.
Hens, 4—1st and 2nd, H. E. Limon.

A. O. S. C. Carrier.

Cocks, 2—1st and 2nd, H. E. Limon.
Hens, 2—1st and 2nd, H. E. Limon.

White Pouter.

Cocks, 4—1st, H. E. Limon; 2nd, J. H. Magill.
Hens, 6—1st, J. H. Magill; 2nd, H. E. Limon.

Blue Pied Pouter.

Cocks, 3—1st, J. H. Magill; 2nd, H. E. Limon.
Hens, 4—1st and 2nd, J. H. Magill.

Black Pied Pouter.

Cocks, 4—1st, J. H. Magill; 2nd, J. & T. Hatton.
Hens, 4—1st, J. H. Magill; 2nd, H. E. Limon.

Yellow or Red Pouter.

Cocks, 7—1st, H. E. Limon; 2nd, Chas. H. Currier.
Hens, 7—1st, J. H. Magill; 2nd, H. E. Limon.

Pigmy Pouter.

Cocks, 10—1st, H. E. Limon; 2nd, J. V. MacAree.
Hens, 10—1st, Chas. H. Currier; 2nd, H. E. Limon.

Muffed Tumbler.

Cocks, 11—1st, A. & T. Readwin; 2nd, Benson & Tregwin.
Hens, 10—1st, Alfred T. Ashby; 2nd, A. & T. Readwin.

L. F. Clean Leg Tumbler.

Cocks, 11—1st, J. V. MacAree; 2nd, A. & T. Readwin.
Hens, 9—1st, Bert Sheward; 2nd, Roy Osgoode.

S. F. Almond Tumbler.

Cocks, 5—1st and 2nd, Jack Elwood.
Hens, 2—1st, Jack Elwood; 2nd, A. & T. Readwin.

S. F., A. O. C. Tumbler.

Cocks, 4—1st, W. H. Reid; 2nd, Jack Elwood.
Hens, 5—1st, Jack Elwood; 2nd, J. & T. Hatton.

Red Barb.

Hens, 1—1st, A. & T. Readwin.

Black Barb.

Cocks, 3—1st and 2nd, Chas. H. Currier.
Hens, 3—1st, Chas. H. Currier; 2nd, L. Ridler.

WHITE TRUMPETER.

Cocks, 3—1st, L. Ridler; 2nd, J. & T. Hatton.
Hens, 3—1st, J. & T. Hatton; 2nd, L. Ridler.

A. O. S. C. TRUMPETER.

Cocks, 2—1st and 2nd, W. H. Reid. *Hens, 2*—1st and 2nd, W. H. Reid.

BLACK JACOBIN.

Cocks, 4—1st and 2nd, Benson & Tregwin.
Hens, 5—1st, W. H. Reid; 2nd, Benson & Tregwin.

RED OR YELLOW JACOBIN.

Cocks, 7—1st, Benson & Tregwin; 2nd, W. H. Reid.
Hens, 8—1st and 2nd, Chas. H. Currier.

WHITE JACOBIN.

Cocks, 9—1st, W. H. Reid; 2nd, Benson & Tregwin.
Hens, 7—1st, Howard Stewart; 2nd, Benson & Tregwin.

A. O. S. C. JACOBIN.

Cocks, 5—1st, J. & T. Hatton; 2nd, Benson & Tregwin.
Hens, 4—1st, W. H. Reid; 2nd, Benson & Tregwin.

ORIENTAL FRILL.

Cocks, 4—1st, Fred. Bell; 2nd, J. V. MacAree.
Hens, 5—1st, Chas. H. Currier; 2nd, Fred Bell.

SILVER DUN ANTWERP.

Cocks, 2—1st and 2nd, W. H. Reid. *Hens, 2*—1st and 2nd, W. H. Reid.

WHITE FANTAIL.

Cocks, 13—1st and 2nd, J. V. MacAree.
Hens, 12—1st, J. V. MacAree; 2nd, Geo. D. Trimble.

BLUE OR BLACK FANTAIL.

Cocks, 9—1st, Bert Sheward; 2nd, Douglas Mitchell.
Hens, 8—1st, W. H. Reid; 2nd, Bert Sheward.

A. O. S. C. FANTAIL.

Cocks, 6—1st, W. H. Reid; 2nd, Bert Sheward.
Hens, 7—1st, Bert Sheward; 2nd, Douglas Mitchell.

RED OR YELLOW MAGPIE.

Cocks, 4—1st, L. Ridler; 2nd, A. & T. Readwin.
Hens, 3—1st and 2nd, L. Ridler.

A. O. C. MAGPIE.

Cocks, 3—1st and 2nd, L. Ridler. *Hens, 3*—1st and 2nd, L. Ridler.

BLUE OR BLACK CHECKERED SHOW HOMER.

Cocks, 4—1st, Alfred Knight; 2nd, W. H. Reid.
Hens, 3—1st and 2nd, Alfred Knight.

A. O. C. Show Homer.

Cocks, 2—1st and 2nd, Alfred Knight.
Hens, 4—1st, W. H. Reid; 2nd, Alfred Knight.

Black Swallow.

Cocks, 4—1st, W. H. Reid; 2nd, A. & T. Readwin.
Hens, 4—1st, W. H. Reid; 2nd, L. Ridler.

A. O. S. C. Swallow.

Cocks, 7—1st, L. Ridler; 2nd, Chas. H. Currier.
Hens, 4—1st, L. Ridler; 2nd, W. H. Reid.

A. O. C. Swallow.

Cocks, 3—1st, L. Ridler; 2nd, A. & T. Readwin.
Hens, 3—1st, L. Ridler; 2nd, W. H. Reid.

Dragoon.

Cocks, 10—1st and 2nd, J. V. MacAree.
Hens, 6—1st, W. Steer; 2nd, L. Ridler.

Archangel.

Cocks, 5—1st, J. & T. Hatton; 2nd, A. & T. Readwin.
Hens, 5—1st, J. & T. Hatton; 2nd, A. & T. Readwin.

Nun.

Cocks, 5—1st, Douglas Mitchell; 2nd, A. & T. Readwin.
Hens, 5—1st and 2nd, Douglas Mitchell.

African Blue or Silver Owl.

Cocks, 3—1st, W. H. Reid; 2nd, Perry Hamm.
Hens, 2—1st and 2nd, Perry Hamm.

African O. A. C. Owl.

Cocks, 6—1st and 2nd, Howard Stewart.
Hens, 7—1st, Howard Stewart; 2nd, W. H. Reid.

English Blue or Silver Owl.

Cocks, 3—1st and 2nd, Fred Bell. *Hens, 2*—1st and 2nd, Fred Bell.

English A. O. C. Owl.

Cocks, 3—1st, Fred Bell; 2nd, A. & T. Readwin.
Hens, 2—1st and 2nd, Fred Bell.

A. O. V. Owl.

Cocks, 8—1st and 2nd, Howard Stewart. *Hens, 9*.—1st and 2nd, W. H. Reid.

Black Turbit.

Cocks, 3—1st and 2nd, Bert Sheward. *Hens, 5*—1st and 2nd, Bert Sheward.

A. O. C. Turbit.

Cocks, 5—1st, Fred Bell; 2nd, Bert Sheward.
Hens, 3—1st and 2nd, Bert Sheward.

A. O. S. Variety Pigeons.

Cocks, 5—1st, A. & T. Readwin; 2nd, J. & T. Hatton.
Hens, 5—1st, J. & T. Hatton; 2nd, A. & T. Readwin.

Abyssinian Cavies.

Pair, 2—1st and 2nd, Wm. Fox.

Peruvian Cavies.

Pair, 2—1st and 2nd, Wm. Fox.

Smooth Coated Cavies.

Pair, 2—1st and 2nd, Wm. Fox.

A. O. V. Rabbits.

Male, 3 —1st, L. Ridler; 2nd, J. M. Ballantyne.
Female, 1—1st, J. M. Ballantyne.

Belgian Hares.

Male, 4—1st and 2nd, Wm. Fox. *Female, 4*—1st and 2nd, Wm. Fox.

Scotch Fancy Canaries.

Male, 2—1st and 2nd, F. W. Hodgkin. *Female, 2*—1st, and 2nd, F. W. Hodgkin.

A. O. V. Canary.

Male, 2—1st and 2nd, F. W. Hodgkin. *Female, 2*—1st and 2nd, F. W. Hodgkin.

English Goldfinch.

Male, 1—1st, J. M. Ballantyne.

Pen of Utility Fowl.

Pen, 9—1st, Geo. A. Robertson; 2nd, Scanlon Bros.; 3rd, Guy Bell.

SELLING CLASS.

Dorkings.

Males, 6—1st, Gordon A. Burns; 2nd, A. G. H. Luxton; 3rd, F. W. Krouse.
Females, 7—1st, R. L. Wheadon; 2nd, Gordon A. Burns; 3rd, Jas. M. McCormack.

Plymouth Rocks.

Males, 15—1st, Miss Z. Barbour; 2nd, Geo. A. Robertson; 3rd, W. J. Alexander.
Females, 4—1st, M. R. Hoover; 2nd, H. Karn; 3rd, Jos. Foster.

Wyandottes.

Males, 9—1st, G. and H. Mack; 2nd, Kemp & Waterman; 3rd, Wilbur Lemon.
Females, 5—1st and 2nd, Kemp & Waterman; 3rd, Wilbur Lemon.

Orpingtons.

Males, 7—1st, Chester Scoyne; 2nd. H. A. Hoffman; 3rd, Robert Patterson.
Females, 5—1st, Kemp & Waterman; 2nd, Chester Scoyne; 3rd, R. L. Wheadon.

Minorcas.

Males, 5—1st, 2nd, and 3rd, R. L. Wheadon.
Females, 3—1st and 2nd, R. L. Wheadon.

LEGHORNS.

Males, 8—1st, M. R. Hoover; 2nd, Peter Scott; 3rd, E. Syer.
Females, 4—1st, F. Wales; 2nd, D. Douglas & Son; 3rd, E. Syer.

RHODE ISLAND REDS.

Males, 7—1st, Jack Philpot; 2nd, W. A. McMaster; 3rd, R. L. Wheadon.
Females, 3—1st, W. Pearson; 2nd, Jack Philpot; 3rd, W. A. McMaster.

ASIATIC, ANY VARIETY.

Males, 4—1st and 3rd, R. McCurdy; 2nd, L. C. Sage.
Females, 2—1st, F. Wales; 2nd, L. C. Sage.

ANY OTHER VARIETY.

Males, 2—1st and 2nd, Wm. McNeil. *Females, 2*—1st and 2nd, Wm. McNeil.

DRESSED POULTRY.

Pair, Brahmas, 3—1st, 2nd, and 3rd, J. E. Mounce.
Pair, Rock Cockerels, 13—1st, Mrs. W. Card; 2nd, Jos. Tomalin; 3rd, Johnson & Ogg.
Pair, Rock Pullets, 7—1st, J. E. Mounce; 2nd, Mrs. W. Card; 3rd, Matt. Wilson.
Pair, Wyandotte Cockerels, 11—1st, 2nd, and 3rd, J. E. Mounce.
Pair, Wyandotte Pullets, 4—1st and 2nd, J. E. Mounce; 3rd, Johnson & Ogg.
Pair, Minorcas or Andalusians, 10—1st and 2nd, J. E. Mounce; 3rd, C. D. Worthington.
Pair, Leghorns, 9—1st, 2nd, and 3rd, J. E. Mounce.
Pair, Dorkings, 3—1st, 2nd, and 3rd, J. E. Mounce.
Pair, Houdans, La Fleche, Creve-Coeurs, any variety, 3—1st, 2nd, and 3rd, Scanlon Bros.
Pair, Games, 5—1st, 2nd, and 3rd, Geo. Fyfe.
Pair, Javas, 4—1st, 2nd, and 3rd, J. E. Mounce.
Pair, Hamburgs, 3—1st, 2nd and 3rd, Scanlon Bros.
Pair, Orpington Cockerels, 9—1st, 2nd, and 3rd, J. E. Mounce.
Pair, Orpington Pullets, 6—1st, 2nd, and 3rd, J. E. Mounce.
Best Pair, Dressed Fowls, 5—1st, J. E. Mounce.
Turkey, any age, Male, 6—1st, 2nd, and 3rd, Woodrow & Sons.
Pair, Turkeys, any age, Female, 8—1st, and 3rd, Woodrow & Sons; 2nd, Jos. Tomalin.
Pair, Turkeys, 1908, Male, 10—1st. and 3rd, Woodrow & Sons; 2nd, Mrs. J. Miles.
Pair, Turkeys, 1908, Female, 8—1st, and 3rd, Woodrow & Sons; 2nd, Mrs. J. Miles.
Best Entry, Dressed Turkeys, 4—1st, Woodrow & Sons.
Pair, White Geese, 7—1st, Woodrow & Sons; 2nd and 3rd, Mrs. J. Miles.
Pair, Colored Geese, 8—1st and 2nd, Scanlon Bros.; 3rd, Woodrow & Sons.
Best Pair, Dressed Geese, 2—1st, Woodrow & Sons.
Pair, White Ducks, 7—1st, Isaac T. Knight & Co.; 2nd, Jos. Tomalin; 3rd, Woodrow & Sons.
Pair, Colored Ducks, 12—1st and 2nd, Woodrow & Sons; 3rd, Isaac T. Knight & Co.
Best Pair, Dressed Ducks, 4—1st, Isaac T. Knight & Co.
Six Brahmas, Cochins or Langshans, 1—1st, J. E. Mounce.
Six Rocks or Wyandottes, 9—1st and 3rd, J. E. Mounce; 2nd, Mrs. W. Card.
Six Minorcas, Andalusians, or Javas, 4.—1st, J. E. Mounce; 2nd, C. D. Worthington; 3rd, Mrs. W. Card.
Six Dorkings, Houdans, Creve-Coeurs, or Orpingtons, 6—1st, 2nd, and 3rd, J. E. Mounce.
Six Games, 2—1st, Geo. Fyfe; 2nd, Scanlon Bros.
Six Leghorns or Hamburgs, 4—1st, J. E. Mounce; 2nd and 3rd, Scanlon Bros.
Six Turkeys, 1908, 7—1st, Woodrow & Sons; 2nd, Mrs. J. Miles; 3rd Woodrow & Sons.
Six Geese, 4—1st, Woodrow & Sons; 2nd, Mrs. J. Miles; 3rd, Scanlon Bros.
Six Ducks, 5—1st and 2nd, Woodrow & Sons; 3rd, Jos. Tomalin.
One Dozen White Eggs, 5—1st, and 2nd, F. W. Krouse; 3rd. Jos. Tomalin.
One Dozen Brown Eggs, 8—1st, Moore Bros.; 2nd, F. W. Krouse; 3rd, F. & T. Parkin.
Six Squabs, 7—1st and 2nd, Chas H. Currier; 3rd, Wm. J. Hood.

POULTRY SPECIALS.

Light Brahmas—Best cock, H. W. Partlo; best cock and hen, H. W. Partlo; best cockerel and Pullet, H. W. Partlo; best collection, H. W. Partlo.

Dark Brahmas—Best cock or cockerel, L. C. Sage; best hen or pullet, L. C. Sage; best colored female, L. C. Sage; best collection, L. C. Sage.

Buff Cochins—Best cock or cockerel, Hugh Wyatt; best hen or pullet, Hugh Wyatt; best collection, Hugh Wyatt.

Partridge Cochins—Best cock or cockerel, C. H. Wilson; best hen or pullet, R. Oke; best collection, F. Wales.

Black Cochins—Best cock, hen, cockerel and pullet, C. A. R. Tilt; best collection, C. A. R. Tilt.

Black Langshans—Best cock or cockerel, R. McCurdy; best hen or pullet, C. A. R. Tilt; best trio, C. A. R. Tilt; best collection. C. A. R. Tilt.

A. O. C. Langshans—Best cock, hen, cockerel and pullet, L. Ridler.

Barred Plymouth Rocks—Best cock, I. K. Millard; second best cock, John Pringle; third best cock, John Pringle; fourth best cock, I. K. Millard; best two hens, I. K. Millard, best hen, I. K. Millard; second best hen, John Pringle; third best hen, I. K. Millard; fourth best hen, Chas. Hockin; best cockerel, I. K. Millard; second best cockerel, I. K. Millard; third best cockerel, John Pringle; fourth best cockerel, Chas. Hockin; best five cockerels, I. K. Millard; best pullet shown by an exhibitor who has not won a first prize at this exhibition in the last five years, Chas. Hockin; best pullet, John Pringle; second best pullet, Chas. Hockin; third best pullet, I. K. Millard; fourth best pullet, Geo. F. Holden; best male, I. K. Millard; best shaped male, I. K. Millard; best colored male, I. K. Millard; best shaped female, John Pringle; best colored female, I. K. Millard.

White Plymouth Rocks—Best cock, John L. Brown; best hen, C. J. Whitney; two whitest hens shown by one exhibitor, Wm. E. Hoggarth; best cockerel, Wm. E. Hoggarth; best pullet, Geo. A. Robertson; best four males, John L. Brown; best collection, Geo. A. Robertson.

Buff Plymouth Rocks—Best hen, John Bawden; best cock, hen, cockerel and pullet, John Bawden.

Buff Plymouth Rocks and Buff Orpingtons—Best colored cockerel, P. E. Aird; best shaped cockerel, J. M. Campbell.

Buff or White Plymouth Rocks—Best male, Wm. E. Hoggarth.

Golden Laced Wyandottes—Best cock or cockerel, John MacPherson; best cock having the neatest head and comb, Wm. Daniel; best pullet, J. H. McGill; best female, J. H. Magill.

Silver or Golden Wyandottes—Best Male, Wilbur Lemon.

Silver Laced Wyandottes—Best cock, Alfred Flawn; best hen, Hintonburg Poultry Yards; best cockerel, Wilbur Lemon; best Pullet, Hintonburg Poultry Yards, best bird, Hintonburg Poultry Yards; best cock, hen, cockerel and pullet, Hintonburg Poultry Yards.

Black Wyandottes—Best cock, G. and J. Bogue; best two cocks, Joe. R. Smith; best hen or pullet, Joe. R. Smith; best cockerel, Joe R. Smith; best pullet, Joe. R. Smith.

Buff Wyandottes—Best cock, Spry & Mick; best two cocks, Spry & Mick; best cockerel and pullet, Spry & Mick; best collection, Spry & Mick.

Silver Pencilled Wyandottes—Best cock or cockerel, Robert Patterson; best hen or pullet, Robert Patterson.

White Wyandottes—Best cock and hen, John S. Martin; best Cockerel and pullet, John S. Martin; best headed cockerel, John S. Martin; best cockerel shown by an exhibitor who has not won a prize at this exhibition since 1903, Wm. Archer; best cockerel showing best table quality, John S. Martin; Best individual bird, John S. Martin; best collection, John S. Martin; best cock, hen, cockerels and pullet, shown by a new exhibitor, Joseph Russell.

Partridge Wyandottes—Best cock or cockerel, F. T. Adams; best hen or pullet, J. E. Fidler; best shaped cockerel, F. T. Adams; pullet with best leg color, S. Rundle; pullet with best pencilling, F. T. Adams; best shaped pullet, Peter P. Becker; best collection, F. T. Adams.

Columbian Wyandottes—Best cock, T. H. Scott; best hen, W. Dawson; best two cocks and two hens, T. H. Scott; best cockerel, T. H. Scott; best shaped cockerel, W. Dawson; best pullet, Schelly Bros.; pullet with best hackle and tail, T. H. Scott; best three pullets, Schelly Bros.; best hackled pullet, T. H. Scott.

Dominiques—Best cock or cockerel, E. Syer; best hen or pullet, Geo. Burn; best collection, E. Syer.

Black Javas—Best cock and cockerel, R. Oke; best cock or cockerel, R. Oke; best hen and pullet, R. Oke; best hen or pullet, R. Oke.

Mottled Javas—Best cock or cockerel, G. and J. Bogue; best hen or pullet, G. and J. Bogue; best cock, hen, cockerel and pullet, G. and J. Bogue.

S. C. Rhode Island Reds—Best cock, Wm. J. Mihen; best cock or cockerel, Wm. J. Mihen; best cock and cockerel, E. Wankel & Son; best hen, Wm. J. Mihen; best hen or pullet, Wm. J. Mihen; best hen and pullet, Wm. J. Mihen; best cockerel, E. Wankel & Son; best cock, hen, cockerel and pullet, Wm. J. Mihen.

R. C. Rhode Island Reds—Best cock or cockerel, A. W. Graham; best hen, Emil Wankel; best hen or pullet, Emil Wankel; best cockerel, A. W. Graham; best two pullets, A. W. Graham.

Black Red Games—Best Pullet, J. W. Roberts; best collection, S. Stapleford.

Duckwing Games—Best cock. W. Barber; best collection, W. Barber.

Pyle Games—Best male, W. Barber; best female, J. W. Parkinson; best cock, hen, cockerel and pullet, J. W. Parkinson.

Indian Games, any variety—Best cock or cockerel, Finchamp & Topping; best hen or pullet, Finchamp & Topping; best pullet, Finchamp & Topping.

Cornish Indian—Best cock, Finchamp & Topping.

Black Sumatra Games—Best two cocks, Frank Shaw; best pullet, C. J. Daniels; best cock, hen, cockerel and pullet, Frank Shaw.

R. C. White Leghorns—Best cock or cockerel, M. R. Hoover; best hen or pullet, W. J. Bell: best cockerel, M. R. Hoover.

S. C. White Leghorns—Best cock, Wm. Ferguson; second best cock, Wm. Ferguson; best headed cock, Wm. Ferguson: best cock and cockerel, Wm. Ferguson; best hen or pullet, F. Wales; best cockerel, Wm. Ferguson; best pullet, F. Wales.

Black Leghorns—Best cock, A. E. Doan; best two cocks and two hens, A. E. Doan; best hen or pullet, A. E. Doan: best collection, A. E. Doan.

R. C. Brown Leghorns—Best cockerel, C. H. Wilson.

S. C. Brown Leghorns—Best cock or cockerel, W. A. Gurney; best hen, W. A. Gurney; best hen or pullet, W. A. Gurney; best cockerel, W. A. Gurney; best saddle striped cockerel shown by an exhibitor who has not won a prize at this exhibition since 1903, Peter Scott; Evenest colored cockerel, W. A. Gurney; best headed cockerel shown by an exhibitor who has not won a prize at this exhibition since 1903, Peter Scott.

Buff Leghorns—Best cock shown by an exhibitor who has not won a prize at this exhibition since 1903, Jas. Snetsinger; best hen, Nate. K. Cornwall; best two hens, Nate. K. Cornwall; best pullet, Nate K. Cornwall.

Spanish—Best collection, G. and J. Bogue.

S. C. Black Minorcas—Best cock, T. A. Faulds; best cockerel, T. A. Faulds; best pullet, T. A. Faulds; best cockerel and pullet, T. A. Faulds; best collection, T. A. Faulds.

R. C. Black Minorcas—Best cock, T. A. Faulds; best cock and cockerel, T. A. Faulds; best collection, T. A. Faulds.

White Minorcas—Best collection, A. C. Moyer.

S. C. White Minorcas—Best hen, A. C. Moyer.

Andalusians—Best cock, H. V. Cosh; best hen, H. V. Cosh; best cockerel, H. V. Cosh; best pullet, Chas. Gorvett; best cock, hen, cockerel and pullet, H. V. Cosh.

Silver Grey Dorkings—Best two cocks, Roswell Goldie; best hen, Jas. M. McCormack; best cockerel, Gordon A. Burns; best pullet, Gordon A. Burns; best male, Gordon A. Burns.

Colored Dorkings—Best male, Jas. M. McCormack; best female, G. and J. Bogue; best cock, hen, cockerel and pullet, Jas. M. McCormack.

White Dorkings—Best cock, Jas. M. McCormack; best hen or pullet, Geo. Burn.

Buff and Black Orpingtons—Winner of the largest number of prizes, H. A. Hoffman.

Buff Orpingtons—Best cock and cockerel, H. A. Hoffman; best cock or cockerel, P. E. Aird; best hen or pullet, Robert Barnes; best five cockerels, H. A. Hoffman; best cockerel or pullet, H. A. Hoffman; best pullet, A. W. E. Hellyer; best collection, A. W. E. Hellyer; best cockerel, H. A. Hoffman; best cock, hen, cockerel and pullet, A. W. E. Hellyer.

S. C. Buff Orpingtons—Best cock and pullet, A. W. E. Hellyer.

S. C. Black Orpingtons—Best cock owned by an exhibitor who has not won a prize at this exhibition since 1903, Harry T. Lush.

Black Orpingtons—Best three cocks, Kemp & Waterman; best headed cock, H. A. Hoffman; best hen, E. Fraleigh; best four hens, E. Fraleigh; best cockerel and pullet, Kemp & Waterman; best four pullets, Kemp & Waterman; best shaped pullet, Kemp & Waterman.

White Orpingtons—Best hen or pullet, Moore Bros.; best cockerel, Moore Bros.; best cock, hen, cockerel and pullet shown by an exhibitor who has not won a prize at this exhibition since 1903, Jas. Snetsinger.

Houdans—Best cock or cockerel, G. and J. Bogue; best hen or pullet, G. and J. Bogue; best cockerel or pullet shown by an exhibitor who has not won a prize at this exhibition since 1903, Geo. Elliott & Co.; best collection, G. and J. Bogue.

Creve-Coeurs—Best hen or pullet, G. and J. Bogue; best cockerel and pullet, G. and J. Bogue.

LaFleche—Best cockerel and pullet, G. and J. Bogue; best male, G. and J. Bogue; best cock, hen, cockerel and pullet, G. and J. Bogue.

W. C. B. Polands—Best cock, Wm. McNeil; best collection, Wm. McNeil.

Golden Polands—Best collection, Wm. McNeil.

Silver Poland—Best collection, Wm. McNeil.

White Polands—Best cock and hen, Wm. McNeil; best collection, Wm. McNeil.

Golden Bearded Polands—Best collection, Wm. McNeil.

Silver Bearded Polands—Best Collection, Wm. McNeil.

White Bearded Polands—Best collection, Wm. McNeil.

Buff Laced Polands—Best laced bird, Wm. McNeil; best collection, Wm. McNeil.

Polands—Best collection, Wm. McNeil.

G. S. Hamburgs—Best spangled breasted cock or cockerel, Jas. Baptie; best color of spangle on cock or cockerel, Richard Oke; best collection, Jas. Baptie.

S. S. Hamburgs—Best pullet, Harry T. Lush; best collection, Richard Oke.

G. P. Hamburgs—Best collection, Richard Oke.

S. P. Hamburgs—Best collection, Richard Oke.

Black Hamburgs—Best cock or cockerel, R. L. Wheadon; best hen or pullet, R. L. Wheadon; best collection, Richard Oke.

Hamburgs—Best collection, Richard Oke.

Red Caps—Best collection, G. W. Kinder; best pullet, Wells Bros.

Sultans—Best collection, Richard Oke.

Silkies—Best collection, E. Saunders.

A. O. V. Fowls—Best cock and hen, Peter P. Becker; best collection, Peter P. Becker.

Black Red Game Bantams—Best cock, W. R. Walker; best hen, W. R. Walker; best cockerel, W. R. Walker; best pullet, Chas R. Crowe; best cock, hen, cockerel and pullet, W. R. Walker.

Brown Red Game Bantams—Best cock, W. R. Walker; best hen, Thos. Sherlock; best cockerel, W. Barber; best pullet, W. Barber; best cock, hen, cockerel and pullet, W. Barber.

Duckwing Game Bantams—Best cock, W. Barber; best two hens, Spires Bros.; best cockerel, Spires Bros.; best pullet, Spires Bros.; best cock, hen, cockerel and pullet, Chas R. Crowe.

Pyle Game Bantams—Best cock, John Crowe; best hen, Tyson & McMaster; best cockerel, Thos. Bower; best pullet, W. Barber; best cock, hen, cockerel and pullet, Thos. Bower.

White Game Bantams—Best male, H. B. Donovan; best female, H. B. Donovan.

Birchen Game Bantams—Best cock, H. B. Donovan; best hen, W. Pearson; best cockerel, Rook Bros.; best pullet, Rook Bros.; best three pullets, W. Pearson.

Indian Game Bantams—Best collection, Doidge & McNeil.

Wheatan Game Bantams—Best female, Rook Bros.

Golden Sebright Bantams—Best cock and hen, Richard Oke; best hen, Richard Oke; best cockerel, T. J. Kiley; best pullet, Richard Oke; best collection, Richard Oke.

Silver Sebright Bantams—Best cock, Richard Oke; best two cocks, W. G. Murray; best hen, Richard Oke; best cockerel, Richard Oke; best pullet, Richard Oke; best collection, Richard Oke.

Black Rose Comb Bantams—Best cock, Richard Oke; best hen, W. G. Murray; best cockerel, Richard Oke; best pullet, R. L. Wheadon; best collection, R. L. Wheadon.

White Rose Comb Bantams—Best cock, W. G. Murray; best hen, Richard Oke; best cockerel, W. G. Murray; best pullet, Richard Oke; best collection, W. G. Murray.

White Cochin Bantams—Best three cocks, Doidge & McNeil; best collection, Doidge & McNeil.

Buff Cochin Bantams—Best cock, Richard Oke; best hen, Rosser Bros.; best cockerel, Rosser Bros.; best pullet, Rosser Bros.

Black Cochin Bantams—Best cock, C. A. R. Tilt; best hen, Rosser Bros.; best cockerel, H. Fraleigh; best pullet, W. J. Slessor; best collection, W. J. Slessor.

Partridge Cochin Bantams—Best cock, W. G. Murray; best hen, Wm. Cadman; best cockerel, Hugh Wyatt; best pullet, Hugh Wyatt; best collection, L. Austin Brill.

White Booted Bantams—Best collection, T. J. Kiley.

S. F. White Booted Bantams—Best cock, W. J. Teale; best hen, W. J. Teale; best cockerel, W. G. Murray; best pullet, T. J. Kiley.

Japanese Black tailed Bantams—Best cock and hen, Richard Oke; best collection, W. G. Murray.

Japanese White Bantams—Best collection, Richard Oke.
Japanese Black Bantams—Best collection, Richard Oke.
A. O. V. Japanese Bantams—Best cock and hen , W. G. Murray; best collection, W. G. Murray.
Polish Bearded Bantams—Best cock or cockerel, T. J. Kiley; best two hens, T. J. Kiley; best collection, T. J. Kiley.
Polish Unbearded Bantams—Best collection, H. B. Donovan.
Brahma Bantams—Best collection. H. W. Partlo.
Ornamental Bantams—Largest Entry, W. G. Murray.
Bronze Turkeys—Best male, W. J. Bell; best female, W. J. Bell; best collection, W. J. Bell.
White Turkeys—Best male, Baker Bros; best female, Baker Bros.; best collection, Baker Bros.
A. O. V. Turkeys—Best Male, A. G. H. Luxton.
Toulouse Geese—Best old male,Geo. Burn; best young male, D. Douglas & Son; best female, D. Douglas & Son; best collection, D. Douglas & Son.
Embden Geese—Best pair, C. A. R. Tilt; best bird, C. A. R. Tilt; best collection, C. A. R. Tilt.
African Geese—Best two old pairs, C. A. R. Tilt.
English Dun Geese—Best Collection, A. G. H. Luxton.
Aylesbury Ducks—Best bird, G. and J. Bogue; best collection, G. and J. Bogue.
Rouen Ducks—Best male. Baker Bros.; best collection, G. & J. Bogue.
Pekin Ducks—Best bird, C. A. R. Tilt; best two pairs, C. A. R. Tilt; best collection, C. A. R. Tilt.
Indian Runner Ducks—Best young pair, S. D. Furminger; best collection, S. D. Furminger.
Cayuga Ducks—Best collection, Isaac T. Knight & Co.
Muscovy Ducks—Best collection, Isaac T. Knight & Co.
Wild Ducks—Best collection, H. Karn.

PIGEON SPECIALS.

Best Pair Silver Dun Antwerps—W. H. Reid.
Best Adult Dragoon Cock—W. Steer.
Best Adult Dragoon Hen—W. Steer.
Best Dragoon in Show—W. Steer.
Best Owl Chinese A. O. V. Hen—W. H. Reid.
Best German Frill Back—A. and T. Readwin.
Best Maltese Pigeon—J. and T. Hatton.
Best Russian Trumpeter Cock—L. Ridler.
Best Russian Trumpeter Hen—W. H. Reid.

MISCELLANEOUS SPECIALS.

Best Collection, Cavies and Belgian Hares—Wm. Fox.
Best Collection, Scotch Fancy Canaries—F. W. Hodgkin.
Best Collection, A. O. V. Canaries—F. W. Hodgkin.
Best Male, Utility Fowl—Scanlon Bros.
Best Pen of Utility Fowls—Geo. A. Robertson.
Best Chicken, Dressed Poultry—J. E. Mounce.
Best Six Chickens of any variety, Dressed Poultry—J. E. Mounce.
Best Exhibit of Chickens, Dressed Poultry—J. E. Mounce.
Best Pair of Chickens shown by a lady Exhibitor—Mrs. W. Card.
Six Heaviest Bronze Turkeys—Woodrow & Sons.
Best Four Birds, Cock, Hen, Cockerel and pullet in Barred Plymouth Rocks, Light Brahmas, or Single Comb Brown Leghorns—H. W. Partlo.
Best Cock, Hen, Cockerel and Pullet in the Show—Wm. McNeil.
Best Exhibit in any one variety of Fowls—J. S. Martin.

EASTERN ONTARIO LIVE STOCK AND POULTRY SHOW.

Held at Ottawa, Ont., January, 18th to 22nd, 1909.

LIST OF PRIZE WINNERS.

HORSES.

Clydesdale Stallions, Foaled Previous to January 1st, 1905.

1st—President Roosevelt, (imp.) [7759] (13651), foaled May 1st, 1902. Exhibited by Smith & Richardson, Columbus, Ont.

2nd—Duke of Malton, (imp.) [7768] (12947), foaled 1903. Exhibited by Smith & Richardson, Columbus, Ont.

3rd—Cecil (imp.) [3352], foaled, 1900. Exhibited by R. Reid & Co., Ottawa.

4th—Baron's Treasure (imp.) [7233], foaled July 12th, 1901. Exhibited by Wm. Meharey, Russell, Ont.

5th—Adam Bede (imp.) [4783] (11992), foaled May, 1902. Exhibited by J. J. Black & Son, Winchester, Ont.

6th—Lundie (imp.) [5981] (13081). Exhibited by Wm. Hodgins, Portage du Fort, Que.

7th—Sir Henry (imp.) [6104] (13200), foaled 1904. Exhibited by Smith & Richardson, Columbus, Ont.

8th—The Percy (imp.) [8206], foaled April 7th, 1904. Exhibited by Wm. Meharey, Russell, Ont.

9th—Acrobat (imp.) [7971] (11242), foaled June 18th, 1904. Exhibited by Robert Ness & Son, Howick, Que.

Clydesdale Stallions, Foaled in 1905.

1st—Black Ivory (imp.) [7761] (13367), foaled April 19th, 1905. Exhibited by Smith & Richardson, Columbus, Ont.

2nd—Baron Elrig (imp.) [8506] (13324), foaled June 9th, 1905. Exhibited by C. W. Barber, Gatineau Point, Que.

3rd—Inheritor (imp.) [7765] (13855), foaled 1905. Exhibited by Smith & Richardson, Columbus, Ont.

4th—Fusilier (imp.) (13482), foaled May 14th, 1905. Exhibited by Robert Ness & Son, Howick, Que.

Clydesdale Stallions, Foaled in 1906.

1st—Dunure Pebble [8461], foaled 1906. Exhibited by Smith & Richardson, Columbus, Ont.

2nd—Prince Ascot [8458], foaled 1906. Exhibited by Smith & Richardson, Columbus, Ont.

3rd—Royal Hall (imp.) [8504] (14492), foaled July 3rd, 1906. Exhibited by C. W. Barger, Gatineau Point, Que.

4th—Dunure Acknowledgment (imp.) [8457] (14486), foaled 1906. Exhibited by Smith & Richardson, Columbus, Ont.

5th—Ascog Pride (imp.) [8505] (13962), foaled June 1st, 1906. Exhibited by C. W. Barber, Gatineau Point, Que.

6th—Lord Kintore (imp.) [8451] (14243), foaled April 17th, 1906. Exhibited by T. Burke, South March, Ont.

Clydesdale Stallions, Foaled in 1907.

1st—Dunure Wallace [8455] (14488), foaled 1907. Exhibited by Smith & Richardson, Columbus, Ont.

2nd—Indomitable (imp.) [8414] (14465), foaled July, 1907. Exhibited by Robert Ness & Son, Howick, Que.

Canadian-Bred Clydesdale and Shire Stallions, Foaled Previous to January 1st, 1907.

1st—Kayama [8029], foaled June 2nd, 1906. Exhibited by Robert Hunter & Sons, Maxville, Ont.

2nd—Stanley Prince 2nd [4325], foaled August 2nd, 1902. Exhibited by D. G. Boyd, Kars, Ont.

3rd—Whitrigg [8218], foaled 1906. Exhibited by W. T. Hodgins, Hazeldean, Ont.

4th—Gladden's Pride [7922], foaled May, 1905. Exhibited by J. J. Black & Son, Winchester, Ont.

Canadian-Bred Clydesdale or Shire Stallions, Foaled on or after January 1st, 1907.

1st—Hurlford (16549), foaled June 3rd, 1907. Exhibited by Smith & Richardson, Columbus, Ont.
2nd—Prince of Huntley [7741], foaled May 20th, 1907. Exhibited by Geo. A. Hodgins, Carp.

Canadian-Bred Clydesdale or Shire Mares, Foaled Previous to January 1st, 1906.

1st—Princess May. Exhibited by Wm. Hodgins, Portage du Fort, Que.
2nd—Hattie McIntosh [7737], foaled April 17th, 1905. Exhibited by Nixon Scharf, Cummings' Bridge, Ont.
3rd—Lady Avondale [10641], foaled July 16th, 1905. Exhibited by Isaac L. Wilson, McGarry, Ont.

Canadian-Bred Clydesdale and Shire Mares, Foaled in 1906.

1st—Lady Glenlivet [14333], foaled July 20th, 1906. Exhibited by Smith & Richardson, Columbus, Ont.
2nd—Her Pretty MacQueen [9631], foaled April 8th, 1906. Exhibited by J. R. McCurdy, Hazeldean, Ont.

Shire Stallions, Any Age.

1st—Coleshill's Royal Albert (imp.) [383], (20367), foaled 1901. Exhibited by Wm. Hodgins, Portage du Fort, Que.
2nd—Royal Fortune [550]. Exhibited by Wm. Hodgins, Portage du Fort, Que.

Hackney Stallions, Foaled Previous to January 1st, 1906.

1st—Rillington Grandee—268—(7581), foaled 1898. Exhibited by J. J. Black & Son, Winchester, Ont.
2nd—Rydale Revival—174—(7976), foaled 1900. Exhibited by R. Ness & Son, Howick, Que.

Standard-Bred Stallions, Any Age.

1st— Pilot Chimes, 36937, foaled 1899. Exhibited by R. W. Stewart, 1016 Bank Street, Ottawa, Ont.
2nd—Prince Ambrose, 63984, foaled 1902. Exhibited by A. H. Skuce, Carsonby, Ont.
3rd—Deveras, 36229, foaled 1894. Exhibited by J. J. Black & Son, Winchester, Ont.

Thoroughbred Stallions, Any Age.

1st—Kirkfield, 39433, foaled 1904. Exhibited by Ottawa Hunt Club, Ottawa, Ont.
2nd—Javelin, 48093, foaled 1905. Exhibited by Ottawa Hunt Club, Ottawa, Ont.

Horses Suitable for Hunters, Geldings or Mares, Any Age.

1st—Dunbeith, foaled 1900. Exhibited by Dr. R. E. Webster, Ottawa, Ont.
2nd—Woodlark, foaled 1903. Exhibited by Dr. R. E. Webster, Ottawa, Ont.
3rd—Skylark, foaled 1901. Exhibited by Dr. R. E. Webster, Ottawa, Ont.
4th—Wyoming. Exhibited by J. B. Duford Ottawa, Ont.
5th—Rex, foaled 1901. Exhibited by His Excellency, Earl Grey, Ottawa, Ont.

Heavy Draught Geldings or Mares, Shown in Single Harness, Three Years Old and Over.

1st—Sally Lloyd (11209). Exhibited by J. J. Black & Son, Winchester, Ont.
2nd—Elora, foaled 1902. Exhibited by W. T. Hodgins, Hazeldean, Ont.
3rd—Lady Marie (11115). Exhibited by J. J. Black & Son, Winchester, Ont.
4th—Charlie, foaled 1903. Exhibited by A. M. Stewart, Dalmeny, Ont.

Heavy Draught Team, in Harness, Geldings or Mares.

1st—Adam Scharf, Cummings' Bridge, Ont.
2nd—The Geo. Matthews Co., Ltd., Hull, Que
3rd—J. H. Fee, Manotick, Ont.
4th—W. Gilchrist, Kinburn, Ont.

CHAMPIONSHIPS.

Clydesdale stallion, any age, Smith & Richardson, Columbus, Ont.
Canadian-Bred Clydesdale or Shire stallion, any age, Robert Hunter & Sons, Maxville, Ont.
Clydesdale or Shire mare, any age, Smith & Richardson, Columbus.
Hackney stallion, any age, J. J. Black & Son, Winchester, Ont.

BEEF CATTLE.

SHORTHORNS.

Steer, 2 years and under 3.

1st, R. Reid & Co., Ottawa; 2nd, Jos. W. Barnett, Brooklin; 3rd, A. A. Armstrong, Fergus.

Steer, 1 year and under 2.

1st, Peter White, Pembroke; 2nd and 5th, Wm. Ormiston & Sons, Columbus; 3rd and 4th, A. A. Armstrong, Fergus.

Steer, under 1 year.

1st, Jas. Leask, Greenbank; 2nd and 3rd, W. C. Edwards & Co., Rockland; 4th, L. Parkinson, Eramosa; 5th, Jos. W. Barnett, Brooklin.

Heifer, 2 years and under 3.

1st, W. C. Edwards & Co., Rockland; 2nd, Peter White, Pembroke; 3rd, Jas. Leask, Greenbank.

Heifer, 1 year and under 2.

1st and 3rd, W. C. Edwards & Co., Rockland; 2nd and 4th, Peter White, Pembroke; 5th, Wm. A. Wallace, Kars.

Heifer, under 1 year.

1st and 3rd, W. C. Edwards & Co., Rockland; 2nd, Jas. Leask, Greenbank; 4th, Peter White, Pembroke; 5th, Wm. A. Wallace, Kars.

GALLOWAYS OR DEVONS.

Steer or Heifer, 2 years and under 3.

1st and 2nd, D. McCrae, Guelph.

Steer or Heifer, 1 year and under 2.

1st and 2nd, D. McCrae, Guelph.

Steer or Heifer, under 1 year.

1st and 2nd, D. McCrae, Guelph.

Cow or Heifer, 3 years or over.

1st, D. McCrae, Guelph.

GRADES OR CROSSES.

Steer, 2 years and under 3.

1st, B. Slattery, Ottawa; 2nd, Wm. Ormiston & Sons, Columbus; 3rd and 5th, A. A. Armstrong, Fergus; 4th, Jas. Leask, Greenbank.

Steer, 1 year and under 2.

1st, B. Slattery, Ottawa; 2nd and 4th, A. A. Armstrong, Fergus; 3rd, Alex. Dynes, Ottawa; 5th, Jas. Leask, Greenbank.

Steer, under 1 year.

1st, Jas. Leask, Greenbank; 2nd and 3rd, Jos. W. Barnett, Brooklin; 4th, R. Reid & Co., Ottawa; 5th, Wm. A. Wallace, Kars.

Heifer, 2 years and under 3.

1st and 5th, Jas. Leask, Greenbank; 2nd and 3rd, A. A. Armstrong, Fergus; 4th, R. Reid & Co., Ottawa.

Heifer, 1 year and under 2.

1st and 2nd, Jas. Leask, Greenbank; 3rd and 4th, A. A. Armstrong, Fergus; 5th, R. Reid & Co., Ottawa.

Heifer, under 1 year.

1st, 3rd, and 5th, Jas. Leask, Greenbank; 2nd, L. Parkinson, Eramosa; 4th, Wm. A. Wallace, Kars.

DRESSED CARCASSES.

Pure-Bred or Grade.

1st, 4th and 5th, A. A. Armstrong, Fergus; 2nd and 3rd, Alex. Dynes, Ottawa; 6th, W. C. Edwards & Co., Rockland.

EXPORT STEERS.

Three Export Steers.

1st, A. A. Armstrong, Fergus; 2nd, 3rd, and 5th, Alex. Dynes, Ottawa; 4th, Wm. Ormiston & Sons, Columbus; 6th, R. Reid & Co., Ottawa.

Special, Grade Steer Sired by a Pure-Bred Shorthorn Bull.

1st and 2nd, B. Slattery, Ottawa; 3rd, Jas. Leask, Greenbank.

Special, Best Beef Steer Any Age, Exhibited by a Resident of the Townships of Nepean or Gloucester.

B. Slattery, Ottawa.

SHEEP.

COTSWOLDS.

Wether, under 1 year.

1st, J. W. Lee & Sons, Simcoe; 2nd, 3rd and 4th, John Sockett, Rockwood.

Three Wethers under 1 year.

1st, John Sockett, Rockwood.

Ewe, under 1 year.

1st, 2nd and 3rd, John Sockett, Rockwood.

Three Ewes, under 1 year.

1st, John Sockett, Rockwood.

Dressed Carcass Wether under 1 year.

1st, J. W. Lee & Sons, Simcoe; 2nd and 3rd, John Sockett, Rockwood.

LINCOLNS.

Wether, under 1 year.

1st, 2nd and 3rd, L. Parkinson, Eramosa.

Three Wethers, under 1 year.

1st and 2nd, L. Parkinson, Eramosa.

Ewe, under 1 year.

1st, 2nd and 3rd, L. Parkinson, Eramosa.

Three Ewes, under 1 year.

1st and 2nd, L. Parkinson, Eramosa.

Dressed Carcass Wether, under 1 year.

1st and 2nd, L. Parkinson.

LEICESTERS.

Ewe, under 1 year.

1st and 2nd, G. & W. Parkinson, Eramosa.

Three Ewes, under 1 year.

1st, G. & W. Parkinson, Eramosa.

OXFORDS.

Wether, under 1 year.

1st, 2nd and 3rd, J. W. Lee & Sons, Simcoe.

Three Wethers under 1 year.

1st, J. W. Lee & Sons, Simcoe.

Ewe, under 1 year.

1st, 2nd and 3rd, J. W. Lee & Sons, Simcoe.

Three Ewes under 1 year.

1st, J. W. Lee & Sons, Simcoe.

Dressed Carcass Wether under 1 year.

1st, J. W. Lee & Sons, Simcoe.

SHROPSHIRES.

Wether, under 1 year.

1st, 2nd and 3rd, J. & D. J. Campbell, Woodville; 4th, 5th and 6th, A. M. Stewart & Sons, Dalmeny.

Three Wethers, under 1 year.

1st, J. & D. J. Campbell; 2nd, A. M. Stewart & Sons, Dalmeny.

Ewe, under 1 year.

1st, 2nd and 3rd, J. & D. J. Campbell, Woodville; 4th, Wm. A. Wallace, Kars; 5th, A. M. Stewart & Sons, Dalmeny.

Three Ewes, under 1 year.

1st, J. & D. J. Campbell, Woodville; 2nd, Wm. A. Wallace, Kars; 3rd, A. M. Stewart & Sons, Dalmeny.

Dressed Carcass Wether under 1 year.

1st, J. & D. J. Campbell, Woodville; 2nd and 3rd, A. M. Stewart & Sons, Dalmeny.

SOUTHDOWNS.

Wether, under 1 year.

1st, 2nd and 3rd, Telfer Bros., Paris.

Three Wethers, under 1 year.

1st, Telfer Bros., Paris; 2nd, Geo. Baker, Simcoe.

Ewe, under 1 year.

1st and 3rd, Telfer Bros., Paris; 2nd, 4th and 5th, Geo. Baker, Simcoe.

Three Ewes, under 1 year.

1st, Telfer Bros., Paris; 2nd, Geo. Baker, Simcoe.

Dressed Carcass Wether under 1 year.

1st and 3rd, Geo. Baker, Simcoe; 2nd, Telfer Bros., Paris.

DORSETS.

Wether, under 1 year.

1st, 2nd and 3rd, R. H. Harding, Thorndale.

Three Wethers, under 1 year.

1st, R. H. Harding, Thorndale.

Ewe, under 1 year.

1st, 2nd and 3rd, R. H. Harding, Thorndale.

Three Ewes, under 1 year.

1st, R. H. Harding, Thorndale.

Dressed Carcass Wether under 1 year.

1st, R. H. Harding, Thorndale.

HAMPSHIRES AND SUFFOLKS.

Wether, under 1 year.

1st, Telfer Bros., Paris.

Ewe, under 1 year.

1st, 2nd and 3rd, Telfer Bros., Paris.

Three Ewes, under 1 year.

1st, Telfer Bros., Paris.

Dressed Carcass Wether under 1 year.

1st, Telfer Bros., Paris.

GRADES OR CROSSES.

Wether, under 1 year.

1st, J. & D. J. Campbell, Woodville; 2nd, L. Parkinson, Eramosa; 3rd, J. W. Lee & Sons, Simcoe.

Three Wethers, under 1 year.

1st, J. & D. J. Campbell, Woodville; 2nd, J. W. Lee & Sons, Simcoe; 3rd, L. Parkinson, Eramosa.

Ewe, under 1 year.

1st and 2nd, Geo. Baker, Simcoe; 3rd and 4th, J. & D. J. Campbell, Woodville.

Three Ewes, under 1 year.

1st, Geo. Baker, Simcoe; 2nd, J. & D. J. Campbell, Woodville; 3rd, L. Parkinson, Eramosa; 4th, J. A. Heron, Billing's Bridge.

Dressed Carcass Wether under 1 year.

1st, 2nd and 3rd, J. R. McCurdy, Hazeldean; 4th, Alex. Dynes, Ottawa.

SWINE.

Yorkshires.

Barrow, 6 months and under 9.

1st, 2nd and 3rd, Jos. Featherston & Son, Streetsville; 4th, Alex. Dynes, Ottawa; 5th, A. H. Foster, Twin Elm; 6th, P. O. Collins, Bowesville.

Barrow, under 6 months.

1st and 3rd, P. O. Collins, Bowesville; 2nd and 5th, Jos. Featherston & Son, Streetsville; 4th, Alex. Dynes, Ottawa.

Sow, 6 months and under 9.

1st and 2nd, Jos. Featherston & Son, Streetsville; 3rd, P. O. Collins, Bowesville; 4th and 6th, Alex. Dynes, Ottawa; 5th, A. H. Foster, Twin Elm.

Sow, under 6 months.

1st and 3rd, P. O. Collins, Bowesville; 2nd and 5th, Jos. Featherston & Son, Streetsville; 4th, Alex. Dynes, Ottawa.

Berkshires.

Barrow, 6 months and under 9.

1st, Wm. A. Wallace, Kars.

Sow, 6 months and under 9.

1st and 4th, Wm. A. Wallace, Kars; 2nd and 3rd, Alex. Dynes, Ottawa.

Sow, under 6 months.

1st and 2nd, Wm. A. Wallace, Kars.

Tamworths.

Barrow, 6 months and under 9.

1st and 2nd, R. Reid & Co., Ottawa; 3rd, Alex. Dynes, Ottawa.

Barrow, under 6 months.

1st and 3rd, R. Reid & Co., Ottawa; 2nd, Alex. Dynes, Ottawa.

Sow, 6 months and under 9.

1st and 4th, Alex. Dynes, Ottawa; 2nd and 3rd, R. Reid & Co., Ottawa.

Sow, under 6 months.

1st and 4th, Alex. Dynes, Ottawa; 2nd and 3rd, R. Reid & Co., Ottawa.

GRADE OR CROSS.

Barrow, 6 months and under 9.

1st and 2nd, Jos. Featherston & Son, Streetsville.

Barrow, under 6 months.

1st and 2nd, Jos. Featherston & Son, Streetsville; 3rd, Samuel Bray, Enfield; 4th and 5th, Alex. Dynes, Ottawa.

Sow, 6 months and under 9.

1st and 2nd, Jos. Featherston & Son, Streetsville; 3rd, Alex. Dynes, Ottawa.

Sow, under 6 months.

1st, R. Reid & Co., Ottawa; 2nd and 5th, Alex. Dynes, Ottawa; 3rd, Jos. Featherston & Son, Streetsville; 4th, Samuel Bray, Enfield.

EXPORT BACON HOGS.

Three Pure-Breds.

1st, P. O. Collins, Bowesville; 2nd, 3rd, and 4th, Jos. Featherston & Son, Streetsville; 5th, Alex. Dynes, Ottawa; 6th, R. Reid & Co., Ottawa; 7th, A. H. Foster, Twin Elm.

Three Grades or Crosses.

1st and 2nd, Jos. Featherston & Son, Streetsville; 3rd and 5th, Alex. Dynes, Ottawa; 4th, Samuel Bray, Enfield .

Three best export bacon hogs.

1st, P. O. Collins, Bowesville; 2nd, Jos. Featherston & Son, Streetsville.

DRESSED CARCASSES.

Three Pure-Breds.

1st, 3rd and 6th, Jos. Featherston & Sons, Streetsville; 2nd, A. H. Foster, Twin Elm; 4th and 5th, Alex. Dynes, Ottawa; 7th, P. O. Collins, Bowesville; 8th, R. Reid & Co., Ottawa.

Three Grades.

1st and 2nd, Jos. Featherston & Son, Streetsville; 3rd and 4th, Alex. Dynes, Ottawa; 5th, Samuel Bray, Enfield.

Three Best Dressed Carcasses of Bacon Hogs.

1st, Jos. Featherston & Son, Streetsville; 2nd, A. H. Foster, Twin Elm.

Name of Cow and Owner.	Lbs. of milk.	Per cent. fat.	Lbs. fat.	Lbs. solids not fat.	Points for days in milk.	Points for fat.	Points for solids, not fat.	Total points.
Class 25, Sec. 1,—Shorthorn Cow, 42 months and over—								
1st, Morning Glory 5th, Samuel Bray, Enfield	136.2	3.46	4.72	11.22	1.1	94.40	44.88	140.38
2nd, Carleton Beauty, J. J. Hodgins, Hazeldean	100.1	3.76	3.77	8.47	.....	75.40	33.80	109.20
3rd, Blossom, R. Reid & Co., Ottawa	95.5	3.83	3.66	8 24	.....	73.20	32.96	106.16
4th, Pansy 4th, R. Reid & Co., Ottawa	76.6	4.08	3.13	6.32	.....	62.60	25.28	87.88
Class 26, Sec. 1,—Ayrshire Cow, 42 months and over—								
1st, Jean Armour, Geo. Rice, Tilsonburg	186 3	3.9	7.28	14.51	.3	153.60	56.56	210.46
2nd, White Floss, H. & J. McKee, Norwich	143.7	4 2	5.98	11.07	1.4	119.60	44.28	165.28
3rd, Sarah 2nd, H. & J. McKee, Norwich	155.8	3.49	5.44	12.33	6.7	108 80	49.32	164.82
4th, Maggie Brown of H. H., N. Dyment. Clappison	146.6	3.74	5.49	11.56	.9	109.80	46.24	156.94
5th, Spottie, H. & J. McKee, Norwich	137.3	3.85	5.29	11.	1.4	105.80	44.	151.20
6th, Rosalee of H. H., N. Dyment, Clappison	136.4	3.6	4.91	10.70	2.5	98.20	42.80	143.50
Class 26, Sec. 2,—Ayrshire Heifer, under 42 months—								
1st, Forget-Me-Not of H. H., N. Dyment, Clappison	106.	4.1	4.41	8.74	.7	88 20	34.96	123.86
2nd, Star's Sarah, H. & J. McKee, Norwich	98.1	3.86	3.79	8.	8.	75.80	32.	115.80
Class 27, Sec 1,—Holstein Cow, 42 months and over—								
1st, Francy 3rd, J. H. Caldwell, Fallowfield	212.1	3.7	7.83	14.42	.....	156.60	57.68	214.28
2nd, Idaline Pauline DeKol, Geo. Rice, Tilsonburg	216.8	3.25	7.07	16.13	1.5	141.40	64.52	207.42
3rd, Maudie DeKol, T. A. Spratt, Billing's Bridge	227.3	3.1	7.05	16.50	.....	141.	66.00	207.
4th, Hasketon Belle 4th, J. H. Caldwell, Fallowfield	181.7	3 1	5.80	12.97	1.2	116.	51.88	169.08
5th, Bouncing Jess 4th, Martin McDowell, Norwich	135.8	3.9	5.32	10.23	.....	106.40	40.92	147.32
Class 27, Sec. 2,—Holstein Heifer, under 42 months—								
1st, Queen's Butler Girl, Geo. Rice, Tilsonburg	150.7	3.12	4.71	10.33	.....	94.20	41.32	135.52
2nd, Lady Calanthus DeKol, Martin McDowell, Norwich	118.	3.7	4.05	8.88	7.4	81.	35.52	123.92
Class 29, Sec. 1,—Grade Cow, 42 months and over								
1st, Jane, T. A. Spratt, Billing's Bridge	187.	3.09	5.79	14.87	.....	115 80	59.48	175.28
2nd, Rosalee, R. A. Heron, Billing's Bridge	169.7	3.53	5.99	12.20	.....	119.80	48.80	168.60
3rd, Granny, Martin McDowell, Norwich	151.8	3.32	5.04	9.87	.....	108.	39.48	147.48
4th, Rose of Robin Hill, Wm. Ormiston & Sons, Columbus	121.2	3.8	4.63	9.66	.....	92.60	38.64	131.24
Class 29, Sec. 2,—Grade Heifer, under 42 months—								
1st, Dina, Martin McDowell, Norwich	122.2	2.98	3.65	8.94	.....	73.	35.76	108.76
2nd, Tiny, R. A. Heron, Billing's Bridge	113.1	2.73	3.10	8.76	.....	62.	35.04	97.04
3rd, Molly, R. Reid & Co., Ottawa	76.5	3.7	2.86	6.10	.....	57.20	24.40	81.60

SEEDS.

Fall Wheat.

1st, Andrew Schmidt, Mildmay.
2nd, C. R. Gies, Heidelberg.
3rd, T. Baker & Son, Solina.
4th, A. H. Foster, Twin Elm.

Spring Wheat.

1st, S. A. Northcott, Taunton.
2nd, J. A. Heron, Billing's Bridge.

Banner Oats.

1st, Jas. Snetsinger, Eamer's Corners.
2nd, Geo. Boyce, Merivale.
3rd, Wm. Shields, Eamer's Corners.

Oats, Any-Other Variety White.

1st, Andrew Schmidt, Mildmay.
2nd, Jas. Snetsinger, Eamer's Corners.
3rd, Wm Shields, Eamer's Corners.
4th, S. J. Woods, Metcalfe.

Barley, Six-Rowed.

1st, S. A. Northcott, Taunton.
2nd, A. H. Foster, Twin Elm.
3rd, Geo. R. Bradley, Carsonby.
4th, Jas. Snetsinger, Eamer's Corners.

Small Field Peas.

1st, Jas. Snetsinger, Eamer's Corners.
2nd, S. A. Northcott, Taunton.

Potatoes, Rose Type.

1st, Jas. Snetsinger, Eamer's Corners.
2nd, Geo. R. Bradley, Carsonby.
3rd, Wm. Shields, Eamer's Corners.

Potatoes, Best Early Variety Other Than Rose Type.

1st, Jas. Snetsinger, Eamer's Corners.
2nd, S. J. Woods, Metcalfe.
3rd, Geo. R. Bradley, Carsonby.

Potatoes, White.

1st, A. H. Foster, Twin Elm.
2nd, Wm. Shields, Eamer's Corners.
3rd, Jas. Snetsinger, Eamer's Corners.
4th, Geo. R. Bradley, Carsonby.

Indian Corn, Best for Ensilage for Ottawa Valley.

1st, J. H. Williams, Fletcher.
2nd, J. A. Fletcher, Valetta.
3rd, Robert Fletcher, Valetta.
4th, Geo. Baker, Simcoe.

Timothy Seed.

1st, Jas. Snetsinger, Eamer's Corners.
2nd, Wm. Shields, Eamer's Corners.
3rd, J. A. Northcott, Taunton.
4th, A. H. Foster, Twin Elm.

POULTRY.

List gives number of entries and awards in each section. For Post Office address of exhibitors, see page 288.

Light Brahmas.

Cocks, 4—1st, 2nd and 3rd, H. W. Partlo.
Hens, 6—1st, 2nd and 3rd, H. W. Partlo.
Cockerels, 4—1st, 2nd and 3rd, H. W. Partlo.
Pulets, 4—1st, 2nd, and 3rd, H. W. Partlo.

Dark Brahmas.

Cocks, 2—1st, McIntosh & Halliday; 2nd, Jas. Snetsinger.
Hens, 2—1st, Jas. Snetsinger; 2nd, McIntosh & Halliday.
Cockerels, 2—1st, Chas. LaRose; 2nd, Jas. Snetsinger.
Pullets, 2—1st, Chas. LaRose; 2nd, Jas. Snetsinger.

Buff Cochins.

Cocks, 4—1st, Hugh Wyatt; 2nd, Chas. LaRose; 3rd, Tooker & Bowey.
Hens, 8—1st, 2nd, and 3rd, Hugh Wyatt.
Cockerels, 5—1st, 2nd, and 3rd, Hugh Wyatt.
Pullets, 7—1st, 2nd and 3rd, Hugh Wyatt.

Partridge Cochins.

Cocks, 5—1st, R. Oke; 2nd, C. H. Wilson; 3rd, F. Wales.
Hens, 6—1st, R. Oke; 2nd and 3rd, F. Wales.
Cockerels, 5—1st, R. Oke; 2nd and 3rd, F. Wales.
Pullets, 6—1st, R. Oke; 2nd and 3rd, F. Wales.

Black Cochins.

Cocks, 1—1st, Chas. LaRose.
Hens 5—1st, W. H. Reid; 2nd, H. R. K. Tozer; 3rd, Tooker & Bowey.
Pullets, 2—1st, W. H. Reid; 2nd, H. R. K. Tozer.

White Cochins.

Hens, 2—1st, Tooker & Bowey; 2nd, McIntosh & Halliday.
Cockerels, 2—1st, Tooker & Bowey.
Pullets, 2—1st and 2nd, Tooker & Bowey.

Langshans.

Cocks, 1—1st, McIntosh & Halliday.
Hens, 2—1st, W. H. Reid; 2nd, Jas. Snetsinger.
Cockerels, 3—1st, F. Wales; 2nd, McIntosh & Halliday; 3rd, Jas. Snetsinger.
Pullets, 2—1st, F. Wales; 2nd, McIntosh & Halliday.

Barred Plymouth Rocks.

Cocks, 20—1st, John Pringle; 2nd, A. P. Hillhouse; 3rd, J. E. Fidler; 4th, John A. Lambertus; 5th, Jean Rolland.
Hens, 26—1st and 3rd, F. A. James; 2nd, F. H. Westbury; 4th, Jos. Fortier; 5th, Dr. G. W. Alexander.
Cockerels, 35—1st, John A. Lambertus; 2nd and 3rd, John Pringle; 4th, F. H. Westbury; 5th, J. E. Fidler.
Pullets, 34—1st and 4th, John Pringle; 2nd, E. L. Goodall; 3rd and 5th, J. E. Fidler.

White Plymouth Rocks.

Cocks, 4—1st, Wm. Craig; 2nd, Geo. Robertson; 3rd, Jos. Fortier.
Hens, 5—1st, Geo. Robertson; 2nd, H. R. K. Tozer; 3rd, Jos. Fortier.
Cockerels, 5—1st, Wm. Craig; 2nd, Jos. Fortier; 3rd, Geo. Robertson.
Pullets, 7—1st and 3rd, Geo. Robertson; 2nd, Jas. Snetsinger.

Buff Plymouth Rocks.

Cocks, 3—1st and 2nd, Hintonburg Poultry Yards; 3rd, Geo. Robertson.
Hens, 5—1st, Hintonburg Poultry Yards; 2nd, Geo. Robertson; 3rd, Jas. Snetsinger.
Cockerels, 9—1st and 2nd, Hintonburg Poultry Yards; 3rd, Geo. Robertson.
Pullets, 10—1st and 2nd, Hintonburg Poultry Yards; 3rd, Geo. Robertson.

Golden Wyandottes.

Cocks, 3—1st and 2nd, J. H. Magill; 3rd, G. Higman, Sr.
Hens, 5—1st and 2nd, J. H. Magill; 3rd, Hintonburg Poultry yards.
Cockerels, 4—1st and 2nd, J. H. Magill; 3rd, Hintonburg Poultry Yards.
Pullets, 6—1st, J. H. Magill; 2nd, G. Higman, Sr.; 3rd, Hintonburg Poultry Yards.

Silver Wyandottes.

Cocks, 3—1st, 2nd, and 3rd, Hintonburg Poultry Yards.
Hens, 7—1st, 2nd, and 3rd, Hintonburg Poultry Yards.
Cockerels, 11—1st, and 3rd.. Hintonburg Poultry Yards, 2nd, Robert Palen.
Pullets, 6—1st and 2nd, Hintonburg Poultry Yards; 3rd, Robert Palen.

Buff Wyandottes.

Cocks, 5—1st and 3rd, Tooker & Bowey; 2nd, John Mason & Son.
Hens, 10—1st and 3rd, John Mason & Son; 2nd, C. M. Taylor.
Cockerels, 8—1st, C. M. Taylor; 2nd, John Mason & Son; 3rd, R. E. Blakely.
Pullets, 12—1st, John Mason & Son; 2nd, 3rd, and 4th, C. M. Taylor.

WHITE WYANDOTTES.

Cocks, 13—1st Jos. Russell; 2nd, Hintonburg Poultry Yards; 3rd, G. Lake; 4th, W. J. Bulloch; 5th, Highland Park Poultry Yards.
Hens, 22—1st and 2nd, Jos. Russell; 3rd, Highland Park Poultry Yards; 4th, Hintonburg Poultry Yards; 5th, W. J. Bulloch.
Cockerels, 21—1st, Highland Park Poultry Yards; 2nd, Jos. Russell; 3rd, G. Lake; 4th and 5th, Hintonburg Poultry Yards.
Pullets, 24—1st, Highland Park Poultry Yards; 2nd, B. J. Hunt; 3rd, Jos. Russell; 4th, W. J. Bulloch; 5th, McDougall & Bedlow.

PARTRIDGE WYANDOTTES.

Cocks, 6—1st and 3rd, J. E. Fidler; 2nd, G. M. Matheson.
Hens, 5,—1st and 3rd, J. E. Fidler; 2nd, G. M. Matheson.
Cockerels, 7—1st and 3rd, Geo. Higman, Jr.; 2nd, J. E. Fidler.
Pullets, 9—1st, Geo. Higman, Jr.; 2nd, G. M. Matheson; 3rd, J. E. Fidler.

COLUMBIAN WYANDOTTES.

Cocks, 3—1st, E. R. Frith; 2nd and 3rd, W. C. Pranschke.
Hens, 6—1st and 2nd, W. C. Pranschke; 3rd, E. R. Frith.
Cockerels, 5—1st, A. & T. Readwin; 2nd, E. R. Frith; 3rd, W. C. Pranschke.
Pullets, 5—1st and 2nd, W. C. Pranschke; 3rd, E. R. Frith.

A. O. V. WYANDOTTES.

Cocks, 7—1st, G. & J. Bogue; 2nd, Jas. Snetsinger; 3rd, Scott & Milroy.
Hens, 8—1st, G. & J. Bogue; 2nd, Scott & Milroy; 3rd, C. M. Evans.
Cockerels, 5—1st, Scott & Milroy; 2nd, T. G. Dunlop; 3rd, C. M. Evans.
Pullets, 5—1st, C. M. Evans; 2nd, A. & T. Readwin; 3rd, Tooker & Bowey.

BLACK JAVAS.

Cocks, 5—1st, R. Oke; 2nd, Point Fortune Poultry Yards; 3rd, Geo. Robertson.
Hens, 7—1st, J. H. Warrington; 2nd, R. Oke; 3rd, Geo. Robertson.
Cockerels, 6—1st, and 3rd, G. & J. Bogue; 2nd, R. Oke.
Pullets, 5—1st and 3rd, G. & J. Bogue; 2nd, J. H. Warrington.

MOTTIED JAVAS.

Cocks, 2—1st, G. & J. Bogue; 2nd, R. Oke.
Hens, 2—1st, G. & J. Bogue; 2nd, R. Oke.
Cockerels, 2—1st, R. Oke; 2nd, G. & J. Bogue.
Pullets, 2—1st and 2nd, G. & J. Bogue.

R. C. RHODE ISLAND REDS.

Cocks, 5—1st and 3rd, Hintonburg Poultry Yards; 2nd, John I. Gill.
Hens, 5—1st, 2nd and 3rd, Hintonburg Poultry Yards.
Cockerels, 6—1st, 2nd, and 3rd, Hintonburg Poultry Yards.
Pullets, 6—1st and 2nd, Hintonburg Poultry Yards; 3rd, J. F. Reason.

S. C. RHODE ISLAND REDS.

Cocks, 4—1st, Wheadon & Pearson; 2nd, Hintonburg Poultry Yards; 3rd, J. Allan Grimes.
Hens, 6—1st, Wheadon & Pearson; 2nd, Hintonburg Poultry Yards; 3rd, J. Allan Grimes.
Cockerels, 9—1st, A. P. Hillhouse; 2nd, Jos. Russell; 3rd, Wheadon & Pearson.
Pullets, 9—1st, J. Allan Grimes; 2nd, A. P. Hillhouse; 3rd, Hintonburg Poultry Yards.

B. B. RED GAMES.

Cocks, 2—1st, W. Barber.
Hens, 3—1st and 2nd, W. Barber; 3rd, Point Fortune Poultry Yards.
Cockerels, 1—1st, J. Lawson.
Pullets, 4—1st and 2nd, W. Barber; 3rd, J. Lawson.

BROWN RED GAMES.

Hens, 3—1st and 2nd, W. Barber; 3rd, W. H. Reid.
Pullets, 2—1st and 2nd, W. Barber.

DUCKWING GAMES.

Cocks, 2—1st and 2nd, W. Barber.
Hens, 2—1st and 2nd, W. Barber.
Cockerels, 2—1st and 2nd, W. Barber.
Pullets, 2—1st and 2nd, W. Barber.

PYLE GAMES.

Cocks, 3—1st, McIntosh & Halliday; 2nd and 3rd, W. Barber.
Hens, 3—1st, McIntosh & Halliday; 2nd and 3rd, W. Barber.
Cockerels, 3—1st and 3rd, W. Barber; 2nd, McIntosh & Halliday.
Pullets, 3—1st, McIntosh & Halliday; 2nd, W. Barber; 3rd, W. Barber.

C. INDIAN GAMES. (LACED.)

Cocks, 5—1st, Chas. LaRose; 2nd and 3rd, Pritchard Bros.
Hens, 6—1st, Chas. LaRose; 2nd, Pritchard Bros.; 3rd, Point Fortune Poultry Yards.
Cockerels, 5—1st, Point Fortune Poultry Yards; 2nd and 3rd, Pritchard Bros.
Pullets, 6—1st, Chas. LaRose; 2nd, Point Fortune P. Y.; 3rd, Pritchard Bros.

A. O. S. V. OR W. INDIAN GAMES.

Cocks, 4—1st, H. R. K. Tozer; 2nd, J. H. Warrington; 3rd, W. H. Reid.
Hens, 3—1st, H. R. K. Tozer; 2nd, J. Lawson.
Cockerels, 3—1st, H. R. K. Tozer; 2nd, W. J. Teale.
Pullets, 3—1st, W. J. Teale; 2nd, H. R. K. Tozer; 3rd, W. Barber.

OLD ENGLISH OR PIT GAMES.

Cocks, 5—1st and 3rd, E. H. Benjamin; 2nd, McDougall & Bedlow.
Hens, 5—1st, E. H. Benjamin; 2nd, J. V. McAree; 3rd, McDougall & Bedlow.
Cockerels, 4—1st and 3rd, E. H. Benjamin; 2nd, J. Lawson.
Pullets, 3—1st, 2nd, and 3rd, E. H. Benjamin.

S. C. WHITE LEGHORNS.

Cock, 9—1st and 3rd, Jas. L. McCormack; 2nd, Donald McKellar.
Hen, 13—1st and 2nd, Jas. L. McCormack; 3rd and 4th, Donald McKellar.
Cockerels, 21—1st, Jas. L. McCormack; 2nd, W. H. Carleton; 3rd, F. Wales, 4th, Donald McKellar.
Pullets, 19—1st and 3rd, W. H. Carleton; 2nd, Donald McKellar; 4th, Jas. L. McCormack; 5th, John A. Belford.

S. C. BROWN LEGHORNS.

Cock, 10—1st, H. F. Becker; 2nd, W. A. Gurney; 3rd, A. J. Engel.
Hen, 14—1st, G. G. Henderson; 2nd, H. F. Becker; 3rd, W. A. Gurney; 4th, Jas. Snetsinger.
Cockerel, 20—1st and 2nd, A. J. Engel; 3rd, H. F. Becker; 4th, G. H. A. Collins; 5th, W. A. Gurney.
Pullet, 12—1st and 2nd, W. A. Gurney; 3rd, G. G. Henderson; 4th, G. H. A. Collins.

S. C. BLACK LEGHORNS.

Cock, 3—1st, A. & T. Readwin; 2nd, W. M. Osborne; 3rd, Geo. Robertson.
Hen, 6—1st, W. M. Osborne; 2nd and 3rd, A. & T. Readwin.
Cockerel, 6—1st, W. M. Osborne; 2nd, A. & T. Readwin; 3rd, Geo. Robertson.
Pullet, 6—1st and 2nd, Geo. Robertson; 3rd, W. M. Osborne.

S. C. BUFF LEGHORNS.

Cock, 3—1st, Jas. Snetsinger; 2nd, S. E. Ellis; 3rd, McIntosh & Halliday.
Hens, 5—1st and 2nd, S. E. Ellis; 3rd, Frank Stagg.
Cockerel, 4—1st, S. E. Ellis; 2nd and 3rd, Frank Stagg.
Pullet, 3—1st and 2nd, S. E. Ellis; 3rd, McIntosh & Halliday.

R. C. BROWN LEGHORNS.

Cock, 2—1st, H. R. K. Tozer; 2nd, C. H. Wilson.
Hen, 3—1st, C. H. Wilson; 2nd, H. R. K. Tozer; 3rd, W. H. Reid.
Cockerel, 4—1st, C. H. Wilson; 2nd, McIntosh & Halliday; 3rd, W. H. Reid.
Pullet, 4—1st, C. H. Wilson; 2nd, H. R. K. Tozer; 3rd, W. H. Reid.

R. C., A. O. S. V. LEGHORNS.

Cock, 6—1st, Geo. Robertson; 2nd, Richard Oke; 3rd, M. R. Hoover.
Hen, 7—1st, A. & T. Readwin; 2nd and 3rd, Geo. Robertson.
Cockerel, 4—1st, M. R. Hoover; 2nd, Jas. Snetsinger; 3rd, Geo. Robertson.
Pullet, 6—1st and 2nd, Geo. Robertson; 3rd, M. R. Hoover

SPANISH.

Cock, 3—1st, G. & J. Bogue; 2nd and 3rd, J. H. Warrington.
Hen, 2—1st, J. H. Warrington; 2nd, G. & J. Bogue.
Cockerel, 6—1st, J. H. Warrington; 2nd, G. & J. Bogue; 3rd, McDougall & Bedlow.
Pullet, 5—1st, G. & J. Bogue; 2nd, J. H. Warrington; 3rd, McDougall & Bedlow.

ANDALUSIAN.

Cock, 2—1st, Baker Bros; 2nd, Chas. LaRose.
Hen, 3—1st, Baker Bros.; 2nd and 3rd, Chas. LaRose.
Cockerel, 4—1st, Chas. LaRose; 2nd. Baker Bros.; 3rd, Geo. Robertson.
Pullet, 3—1st and 2nd, Chas. LaRose; 3rd, Baker Bros.

BLACK MINORCA.

Cock, 9—1st and 2nd, L. V. Zavitz; 3rd, E. R. Frith.
Hen, 13—1st and 2nd, Wm. Ellis; 3rd and 4th, L. V. Zavitz.
Cockerel, 21—1st, and 2nd, Hintonburg Poultry Yards; 3rd, 4th and 5th, L. V. Zavitz.
Pullet, 21—1st, 2nd, 4th and 5th, L. V. Zavitz; 3rd, Hintonburg Poultry Yards.

WHITE MINORCAS.

Cock, 4—1st, A. C. Moyer; 2nd, W. M. Osborne; 3rd, J. A. Benson.
Hen, 6—1st, A. C. Moyer; 2nd and 3rd, J. A. Benson.
Cockerel, 3—1st, A. C. Moyer; 2nd, W. M. Osborne; 3rd, J. A. Benson.
Pullet, 5—1st and 3rd, A. C. Moyer; 2nd, J. M. Peaker.

BUFF ORPINGTON.

Cock, 4—1st and 2nd, A. W. E. Hellyer; 3rd, D. B. Alexander.
Hen, 5—1st, 2nd and 3rd, A. W. E. Hellyer.
Cockerel, 11—1st and 2nd, A. W. E. Hellyer; 3rd, H. A. Hoffman.
Pullet, 9—1st and 2nd, A. W. E. Hellyer; 3rd, H. A. Hoffman.

WHITE ORPINGTON.

Cock, 2—1st, M. C. Neate; 2nd, Jas. Snetsinger.
Hen, 2—1st and 2nd, Jas. Snetsinger.
Cockerel, 1—1st, Jas. Snetsinger.
Pullet, 2—1st and 2nd, Jas. Snetsinger.

A. O. V. ORPINGTON.

Cocks, 6—1st, E. A. Rawlings; 2nd and 3rd, Hamilton & Scoyne.
Hen, 9—1st, Hintonburg Poultry Yards; 2nd, W. H. Slinn; 3rd, Hamilton & Scoyne.
Cockerel, 14—1st and 4th, Hamilton & Scoyne; 2nd, J. V. Mulville; 3rd, Hintonburg Poultry Yards.
Pullet, 14—1st, Hamilton & Scoyne; 2nd, Rev. T. J. Stiles; 3rd, 4th, J. V. Mulville.

SILVER GRAY DORKING.

Cock, 4—1st, J. H. Warrington; 2nd, C. H. Wilson; 3rd, McDougall & Bedlow.
Hen, 5—1st, Point Fortune Poultry Yards; 2nd, McDougall & Bedlow; 3rd, W. H. Reid.
Cockerel, 3—1st, Jas. Snetsinger; 2nd and 3rd, McDougall & Bedlow.
Pullet, 3—1st and 2nd, McDougall & Bedlow; 3rd, J. Snetsinger.

COLORED DORKING.

Cock, 2—1st, J. H. Warrington; 2nd, G. & J. Bogue.
Hen, 5—1st, G. & J. Bogue; 2nd, J. H. Warrington; 3rd, Geo. Robertson.
Cockerel, 4—1st, J. H. Warrington; 2nd, G. & J. Bogue; 3rd, Geo. Robertson.
Pullet, 5—1st, J. H. Warrington; 2nd and 3rd, G. & J. Bogue.

WHITE DORKING.

Cock, 1—1st, J. H. Warrington.
Hen, 2—1st and 2nd, J. H. Warrington.
Cockerel, 3—1st and 2nd, J. H. Warrington.
Pullet 3—1st and 2nd, J. H. Warrington: 3rd, Jas. Snetsinger.

HOUDAN.

Cock, 3—1st, G. & J. Bogue; 2nd, McIntosh & Halliday; 3rd, McDougall & Bedlow.
Hens, 3—1st, G. & J. Bogue; 2nd, McDougall & Bedlow; 3rd, McIntosh & Halliday.
Cockerel, 5—1st and 3rd, G. & J. Bogue; 2nd, McDougall & Bedlow.
Pullet, 5—1st and 2nd, G. & J. Bogue; 3rd, McDougall & Bedlow.

CREVE-COEUR.

Cock, 2—1st, G. & J. Bogue; 2nd, J. H. Warrington.
Hen, 3—1st, G. & J. Bogue; 2nd, J. H. Warrington; 3rd, Richard Oke.
Cockerels, 3—1st and 3rd, G. & J. Bogue; 2nd, Richard Oke.
Pullet, 2—1st and 2nd, G. & J. Bogue.

LAFLECHE.

Cock, 2—1st, G. & J. Bogue; 2nd, J. H. Warrington.
Hen, 3—1st, J. H. Warrington; 2nd, Richard Oke; 3rd, G. & J. Bogue.
Cockerel, 2—1st, Richard Oke; 2nd, G. & J. Bogue.
Pullet, 3—1st, G. & J. Bogue; 2nd, J. H. Warrington; 3rd, Richard Oke.

FAVEROLLE.

Cock, 1—1st, McIntosh & Halliday.
Hen, 1—1st, McIntosh & Halliday.
Pullet, 1—1st, McIntosh & Halliday.

BLACK HAMBURG.

Cock, 6—1st, Wheadon & Pearson; 2nd, Richard Oke; 3rd, H. Baptie.
Hen, 10—1st and 3rd, Richard Oke; 2nd, H. Baptie.
Cockerel, 4—1st, Richard Oke; 2nd, Wheadon & Pearson; 3rd, Point Fortune Poultry Yards.
Pullet, 5—1st and 2nd, Richard Oke; 3rd, Wheadon & Pearson.

G. P. HAMBURG.

Cock, 2—1st, Richard Oke; 2nd, Point Fortune Poultry Yards.
Hen, 3—1st, Richard Oke; 2nd and 3rd, Point Fortune Poultry Yards
Cockerel, 3—1st, Richard Oke; 2nd and 3rd, Point Fortune Poultry Yards.
Pullet, 4—1st and 2nd, Richard Oke; 3rd, Point Fortune Poultry Yards.

S. P. HAMBURG.

Cock, 2—1st, Richard Oke; 2nd, Point Fortune Poultry Yards.
Hen, 3—1st, Richard Oke; 2nd and 3rd, Point Fortune Poultry Yards.
Cockerel, 3—1st, Richard Oke; 2nd and 3rd, Point Fortune.
Pullet, 4—1st and 2nd, Richard Oke; 3rd, Point Fortune.

G. S. HAMBURG.

Cock, 4—1st, G. & J. Bogue; 2nd, R. Oke; 3rd, H. Baptie.
Hen, 5—1st, 2nd and 3rd, H. Baptie.
Cockerel, 4—1st, R. Oke; 2nd, G. & J. Bogue; 3rd, H. Baptie.
Pullet, 3—1st, H. Baptie; 2nd, R. Oke.

S. S. HAMBURG.

Cock, 6—1st, R. Oke; 2nd, H. Baptie; 3rd, Emmet Reid.
Hen, 5—1st, R. Oke; 2nd and 3rd, Point Fortune Poultry Yards.
Cockerel, 5—1st, H. Baptie; 2nd and 3rd, W. H. Fennell.
Pullet, 8—1st and 3rd, H. Baptie; 2nd, R. Oke.

RED CAP.

Cock, 1—1st, Jas. Snetsinger.
Hen, 1—1st, J. H. Warrington.
Cockerel, 1—1st, McIntosh & Halliday
Pullet, 1—1st, McIntosh & Halliday.

W. C. B. POLAND.

Cock, 1—1st, Wm. McNeil.
Hen, 5—1st and 2nd, Wm. McNeil; 3rd, J. A. Barrett.
Cockerel, 3—1st and 2nd, Wm. McNeil; 3rd, J. A. Barrett.
Pullet, 3—1st and 2nd, Wm. McNeil; 3rd, Point Fortune Poultry Yards.

Golden Poland.

Cock, 4—1st and 3rd, Wm. McNeil; 2nd, G. & J. Bogue.
Hen, 4—1st, G. & J. Bogue; 2nd, Wm. McNeil; 3rd, Point Fortune Poultry Yards.
Cockerel, 5—1st and 3rd, G. & J. Bogue; 2nd, Wm. McNeil.
Pullet, 5—1st, G. & J. Bogue; 2nd and 3rd, Wm. McNeil.

Silver Poland.

Cock, 4—1st and 3rd, Wm. McNeil; 2nd, G. & J. Bogue.
Hen, 4—1st and 2nd, Wm. McNeil; 3rd, G. & J. Bogue.
Cockerel, 4—1st and 2nd, Wm. McNeil; 3rd, G. & J. Bogue.
Pullet, 4—1st and 3rd, Wm. McNeil; 2nd, G. & J. Bogue.

White Poland.

Cock, 2—1st and 2nd, Wm. McNeil.
Hen, 2—1st and 2nd, Wm. McNeil.
Cockerel, 2—1st and 2nd, Wm. McNeil.
Pullet, 2—1st and 2nd, Wm. McNeil.

A. O. S. V. Poland.

Cock, 3—1st, G. & J. Bogue; 2nd and 3rd, Wm. McNeil.
Hen, 5—1st and 2nd, G. & J. Bogue; 3rd, Wm. McNeil.
Cockerel, 4—1st and 3rd, G. & J. Bogue; 2nd, Wm. McNeil.
Pullet, 4—1st and 3rd, Wm. McNeil; 2nd, G. & J. Bogue.

A. O. S. V. Fowls.

Cock, 2—1st, G. & J. Bogue; 2nd, F. Wales.
Hen, 4—1st, G. & J. Bogue; 2nd, Point Fortune Poultry Yards, 3rd, Richard Oke.
Cockerel, 4—1st, J. H. Warrington; 2nd, Scott & Milroy; 3rd, F. Wales.
Pullet, 4—1st, J. H. Warrington; 2nd, Scott & Milroy; 3rd, F. Wales.

Black Red Game Bantams.

Cock, 5—1st, Rook Bros.; 2nd, Mutchmore & Co.; 3rd, Wheadon & Pearson.
Hens, 5—1st, Rook Bros.; 2nd, Mutchmor & Co.; 3rd, W. Barber.
Cockerel, 2—1st, Rook Bros.; 2nd, W. Barber.
Pullet, 4—1st, Rook Bros.; 2nd, W. Barber; 3rd, Mutchmore & Co.

Brown Red Game Bantams.

Cock, 4—1st, Wheadon & Pearson; 2nd, Mutchmor & Co.; 3rd, W. Barber.
Hen, 4—1st, Wheadon & Pearson; 2nd, Mutchmor & Co.; 3rd, W. Barber.
Cockerel, 3—1st and 3rd, W. Barber; 2nd, Wheadon & Pearson.
Pullet, 5—1st, Mutchmor & Co.; 2nd, W. Barber; 3rd, Wheadon & Pearson.

Duckwing Game Bantams.

Cock, 4—1st, Mutchmor & Co.; 2nd, Wheadon & Pearson; 3rd, W. Barber.
Hen, 5—1st, W. Barber; 2nd, Mutchmor & Co.; 3rd, Wheadon & Pearson.
Cockerel, 5—1st and 3rd, Wheadon & Pearson; 2nd, Mutchmor & Co.
Pullet, 4—1st and 3rd, W. Barber; 2nd, Mutchmor & Co.

Pyle Game Bantams.

Cock, 4—1st, Wheadon & Pearson; 2nd, W. Barber; 3rd, Mutchmor & Co.
Hen, 5—1st, Rook Bros.; 2nd and 3rd, W. Barber.
Cockerel, 5—1st, Rook Bros.; 2nd, W. Barber; 3rd, Mutchmor & Co.
Pullet, 5—1st, Mutchmor & Co., 2nd, Rook Bros.; 3rd, W. Barber.

A. O. V. Game Bantams.

Cock, 4—1st, Rook Bros.; 2nd, P. E. Aird; 3rd, J. V. McAree.
Hen, 4—1st, Mutchmor & Co.; 2nd, Wheadon & Pearson; 3rd, Rook Bros.
Cockerel, 2—1st, Rook Bros.; 2nd, Wheadon & Pearson.
Pullet, 2—1st, Wheadon & Pearson; 2nd, Rook Bros.

G. Sebright Bantams.

Cock, 4—1st, Richard Oke; 2nd, Wheadon & Pearson; 3rd, L. V. Zavitz.
Hen, 4—1st, Richard Oke; 2nd, G. & J. Bogue; 3rd, Wheadon & Pearson.
Cockerel, 4—1st, Richard Oke; 2nd, Wheadon & Pearson; 3rd, L. V. Zavitz.
Pullet, 5—1st and 2nd, Richard Oke; 3rd, Wheadon & Pearson.

S. Sebright Bantams.

Cock, 4—1st, Richard Oke; 2nd, L. V. Zavitz; 3rd, Wheadon & Pearson.
Hen, 5—1st, Richard Oke; 2nd, Wheadon & Pearson; 3rd, L. V. Zavitz.
Cockerel, 3—1st, Richard Oke; 2nd, Wheadon & Pearson; 3rd, L. V. Zavitz.
Pullet, 4—1st and 2nd, Richard Oke; 3rd, Wheadon & Pearson.

B. (R. C. B.) Bantam.

Cock, 7—1st and 2nd, Wheadon & Pearson; 3rd, W. J. Slessor.
Hen, 7—1st, 2nd and 3rd, Wheadon & Pearson.
Cockerel, 6—1st and 3rd, Wheadon & Pearson; 2nd, Richard Oke.
Pullet, 6—1st and 2nd, Wheadon & Pearson; 3rd, R. Oke.

Buff Cochin Bantam.

Cock, 4—1st, Richard Oke; 2nd, Beaton & Stoate; 3rd, Doidge & McNeil.
Hen, 5—1st, Shaw & McIntosh; 2nd, Doidge & McNeil; 3rd, Beaton & Stoate.
Cockerel, 3—1st, Doidge & McNeil; 2nd, Shaw & McIntosh; 3rd, Beaton & Stoate.
Pullet, 4—1st, Doidge & McNeil; 2nd, R. Oke; 3rd, Shaw & McIntosh.

White Cochin Bantam.

Cock, 5—1st and 3rd, Doidge & McNeil; 2nd, Wheadon & Pearson.
Hen, 4—1st and 2nd, Doidge & McNeil; 3rd, Wheadon & Pearson.
Cockerel, 4—1st and 2nd, Doidge & McNeil; 3rd, Wheadon & Pearson.
Pullet, 4—1st and 2nd, Doidge & McNeil; 3rd, Wheadon & Pearson.

Partridge Cochin Bantam.

Cock, 3—1st, G. & J. Bogue; 2nd, Wheadon & Pearson; 3rd, H. R. K. Tozer.
Hen, 3—1st, G. & J. Bogue; 2nd, Wheadon & Pearson; 3rd, H. R. K. Tozer.
Cockerel, 2—1st, Wheadon & Pearson; 2nd, H. R. K. Tozer.
Pullet, 2—1st, H. R. K. Tozer; 2nd, Wheadon & Pearson.

A. O. V. Cochin Bantam.

Cock, 7—1st, F. Wales; 2nd and 3rd, Doidge & McNeil.
Hen, 7—1st, W. J. Slessor; 2nd, Howard Fraleigh; 3rd, Wheadon & Pearson.
Cockerel, 7—1st, Wheadon & Pearson; 2nd, W. J. Slessor; 3rd, Howard Fraleigh.
Pullet, 7—1st and 3rd, Doidge & McNeil; 2nd, W. J. Slessor.

Japanese Bantam.

Cock, 3—1st and 2nd, Richard Oke; 3rd, Rook Bros.
Hen, 3—1st and 3rd, Richard Oke; 2nd, Rook Bros.
Cockerel, 4—1st and 2nd, L. V. Zavitz; 3rd, Richard Oke.
Pullet, 4—1st and 2nd, L. V. Zavitz; 3rd, Richard Oke.

A. O. S. V. Bantam.

Cock, 7—1st, Richard Oke; 2nd, G. & J. Bogue; 3rd, Wheadon & Pearson.
Hen, 7—1st, G. & J. Bogue; 2nd, Richard Oke; 3rd, Wheadon & Pearson.
Cockerel, 5—1st, G. & J. Bogue; 2nd and 3rd, R. Oke.
Pullet, 7—1st and 2nd, Richard Oke; 3rd, G. & J. Bogue.

Bronze Turkey.

Male, old. 3—1st, Jas. Snetsinger; 2nd, A. Thompson; 3rd, A. H. Foster.
Female, old, 5—1st, Geo. R. Bradley; 2nd and 3rd, Jas. Snetsinger.
Male, young, 9—1st and 2nd, Geo. R. Bradley; 3rd, A. H. Foster.
Female, young, 7—1st, Jas. Snetsinger; 2nd, Chesley Pillar; 3rd, A. Thompson.

White Turkey.

Male, old, 2—1st, Baker Bros.; 2nd, Geo. Baker.
Female, old, 4—1st, Baker Bros.; 2nd and 3rd, A. Thompson.
Male, young, 4—1st, Geo. Baker; 2nd, Baker Bros.; 3rd, A. Thompson.
Female, young, 4—1st, Baker Bros.; 2nd and 3rd, A. Thompson.

A. O. S. V. Turkey.

Female, old, 2—1st and 2nd, A. Thompson.
Male, young, 4—1st and 2nd, A. Thompson; 3rd, Baker Bros.
Female, young, 4—1st and 3rd, A. Thompson; 2nd, Baker Bros.

Toulouse Geese.

Male, old, 3—1st, Baker Bros.; 2nd and 3rd, A. Thompson.
Female, old, 3—1st, Baker Bros.; 2nd and 3rd, A. Thompson.
Male, young, 2—1st, Baker Bros.; 2nd, A. Thompson.
Female, young, 2—1st, Baker Bros.; 2nd, A. Thompson.

Embden Geese.

Male, old, 3—1st, Baker Bros.; 2nd and 3rd, A. Thompson.
Female, old, 3—1st and 3rd, A. Thompson; 2nd, Baker Bros.
Male, young, 3—1st, Baker Bros.; 2nd and 3rd, A. Thompson.
Female, young, 3—1st and 2nd, A. Thompson; 3rd, Baker Bros.

China Geese.

Male, old, 2—1st and 2nd, A. Thompson.
Female, old, 2—1st and 2nd, A. Thompson.
Male, young, 2—1st and 2nd, A. Thompson.
Female, young, 2—1st and 2nd, A. Thompson.

A. O. V. Geese.

Male, old, 4—1st, Baker Bros.; 2nd and 3rd, A. Thompson; 4th, Jos. Fortier.
Female, old, 3—1st, Baker Bros.; 2nd, A. Thompson; 3rd, Jos. Fortier.
Male, young, 3—1st, Baker Bros.; 2nd, A. Thompson; 3rd, Jos. Fortier.
Female, young, 3—1st, Baker Bros.; 2nd, A. Thompson; 3rd, Jos. Fortier.

Rouen Duck.

Male, old, 4—1st, Baker Bros.; 2nd, G. & J. Bogue; 3rd, McDougall & Bedlow.
Female, old, 5—1st and 2nd, G. & J. Bogue; 3rd, McDougall & Bedlow.
Male, young, 6—1st and 2nd, Baker Bros.; 3rd, Geo. Robertson.
Female, young, 5—1st and 2nd, G. & J. Bogue; 3rd, Baker Bros.

Pekin Duck.

Male, old, 4—1st, Baker Bros.; 2nd, Tooker & Bowey; 3rd, Jas. Snetsinger.
Female, old, 4—1st, Baker Bros.; 2nd, Jas. Snetsinger; 3rd, Tooker & Bowey.
Male, young, 4—1st, Baker Bros.; 2nd, Jas. Snetsinger; 3rd, Geo. Robertson.
Female, young, 3—1st, Baker Bros.; 2nd, Jas. Snetsinger; 3rd, A. Thompson.

Aylesbury Duck.

Male, old, 5—1st and 2nd, G. & J. Bogue; 3rd, A. Thompson.
Female, old, 4—1st and 2nd, G. & J. Bogue; 3rd, McDougall & Bedlow.
Male, young, 3—1st and 2nd, G. & J. Bogue; 3rd, A. Thompson.
Female, young, 4—1st and 2nd, G. & J. Bogue; 3rd, McDougall & Bedlow.

Cayuga Duck.

Male, old, 5—1st, Baker Bros.; 2nd, J. H. Warrington; 3rd, G. & J. Bogue.
Female, old, 4—1st, Baker Bros.; 2nd, Geo. Robertson; 3rd, A. Thompson.
Male, young, 6—1st, Baker Bros.; 2nd and 3rd, Geo. Robertson.
Female, young, 6—1st, Baker Bros.; 2nd, Geo. Robertson; 3rd, J. H. Warrington.

INDIAN RUNNER DUCKS.

Male, old, 1—1st, A. Thompson.
Female, old, 2—1st, A. Thompson; 2nd, Geo. Robertson.
Male, young, 2—1st, A. Thompson; 2nd, Geo. Robertson.
Female, young, 1—1st, A. Thompson.

A. O. V. DUCK.

Male, old, 4—1st, Baker Bros.; 2nd and 3rd. A. Thompson.
Female, old, 4—1st, Baker Bros.; 2nd and 3rd. A. Thompson.
Male, young, 3—1st and 2nd, A. Thompson; 3rd, McDougall & Bedlow.
Female, young, 3—1st and 2nd, A. Thompson; 3rd, McDougall & Bedlow.

PIGEONS.

CARRIERS.

Cock, 5—1st and 2nd, E Limon. *Hens, 6*—1st and 2nd, E. Limon.

WHITE POUTER.

Cocks, 4—1st, J. H. McGill, 2nd, Mutchmore & Co.
Hens, 5—1st, Mutchmore & Co.; 2nd, E. Limon.

A. O. C. POUTER.

Cocks, 7—1st, John Belford, 2nd, W. H. Reid.
Hens, 7—1st, J. H. Magill, 2nd, W. H. Reid.

PIGMY POUTER.

Cocks, 8—1st and 2nd, E. Limon. *Hens, 8*—1st, E. Limon, 2nd, W. H. Reid.

L. F. MUFFED TUMBLERS.

Cocks, 1—1st, A. & T. Readwin. *Hens, 1*—1st, A. & T. Readwin.

L. F. CLEAN LEG TUMBLERS.

Cocks, 8—1st, J. V. McAree, 2nd, Bert Sheward.
Hens, 7—1st, Bert Sheward; 2nd, A. & T. Readwin.

S. F. TUMBLERS.

Cocks, 2—1st, W. H. Reid; 2nd, A. & T. Readwin.
Hens, 2—1st, W. H. Reid; 2nd, A. & T. Readwin.

ANY COLOR BARB.

Cocks, 3—1st and 2nd, C. H. Currier.
Hens, 3—1st, C. H. Currier; 2nd, L. Ridler.

TRUMPETERS.

Cocks, 5—1st, L. Ridler, 2nd, W. H. Read.
Hens, 5—1st, L. Ridler, 2nd, W. H. Read.

JACOBINS, R. OR Y.

Cocks, 5—1st, C. H. Currier; 2nd, W. H. Read.
Hens, 6—1st, W. H. Read; 2nd, C. H. Currier.

WHITE JACOBIN.

Cocks, 4—1st, W. H. Read; 2nd, C. H. Currier.
Hens, 5—1st, C. H. Currier; 2nd, W. H. Read.

A. O. S. C. JACOBIN.

Cocks, 3—1st and 2nd, W. H. Reid. *Hens, 3*—1st and 2nd, W. H. Reid.

SILVER DUN ANTWERPS.

Cocks, 2—1st and 2nd, W. H. Reid. *Hens, 2*—1st and 2nd, W. H. Reid.

WHITE FANTAILS.

Cocks, 6—1st, J. V. McAree; 2nd, Mutchmore & Co.
Hens, 5—1st, Mutchmore & Co.; 2nd, J. V. McAree.

BLUE FANTAIL.

Cocks, 2—1st, A. & T. Readwin; 2nd, W. H. Reid.
Hens, 2—1st, A. & T. Readwin; 2nd, W. H. Reid.

A. O. S. C. FANTAILS.

Cocks, 3—1st, Hiawatha Pigeon Lofts; 2nd, W. H. Reid.
Hens, 3—1st, W. H. Reid; 2nd, A. & T. Readwin.

BLACK MAGPIE.

Cocks, 6—1st and 2nd, Mutchmore & Co. *Hens, 4*—1st and 2nd, L. Ridler.

RED MAGPIE.

Cocks, 9—1st, Mutchmore & Co.; 2nd, L. Ridler.
Hens, 7—1st and 2nd, L. Ridler.

A. O. C. MAGPIE.

Cocks, 7—1st, L. Ridler; 2nd, Mutchmore & Co.
Hens, 5—1st, L. Ridler; 2nd, Mutchmore & Co.

BLUE CHEQUERED SHOW HOMER.

Cocks, 4—1st and 2nd, Alfred Knight. *Hens, 5*—1st and 2nd, Alfred Knight.

A. O. C. SHOW HOMER

Cocks, 4—1st and 2nd, Alfred Knight. *Hens, 4*—1st and 2nd, Alfred Knight.

BLUE FLYING HOMER.

Cocks, 4—1st, R. E. Blakeley; 2nd, Hiawatha Pigeon Lofts.
Hens, 3—1st, A. & T. Readwin; 2nd, R. E. Blakeley.

A. O. C. FLYING HOMER.

Cocks, 7—1st, John Belford; 2nd, A. & T. Readwin.
Hens, 8—1st, C. C. Cornish; 2nd, A. & T. Readwin.

BLACK SWALLOW.

Cocks, 4—1st, W. H. Reid; 2nd, A. & T. Readwin.
Hens, 3—1st, A. & T. Readwin; 2nd, W. H. Reid

A. O. S. C. SWALLOW.

Cocks, 4—1st, W. H. Reid; 2nd, L. Ridler.
Hens, 3—1st, A. & T. Readwin; 2nd, L. Ridler.

A. O. C. SWALLOWS.

Cocks, 5—1st, L. Ridler; 2nd, W. H. Reid.
Hens, 4—1st, W. H. Reid; 2nd, Mutchmore & Co.

DRAGOONS.

Cocks, 5—1st and 2nd, J. V. McAree.
Hens, 4—1st, J. V. McAree; 2nd, L. Ridler.

ARCHANGELS.

Cocks, 5—1st, W. H. Reid; 2nd, A. & T. Readwin.
Hens, 6—1st, Willie Dowler; 2nd, E. K. Dallimore.

BLACK NUN.

Cocks, 3—1st, A. & T. Readwin; 2nd, L. Ridler.
Hens, 4—1st, L. Ridler; 2nd, W. H. Reid.

A. O. C. NUN.

Cocks, 3—1st, L. Ridler; 2nd, W. H. Reid.
Hens, 4—1st, L. Ridler; 2nd, A. & T. Readwin.

WHITE AFRICAN OWLS.

Cocks, 3—1st, W. H. Reid 2nd, Mutchmore & Co.
Hens, 2—1st and 2nd, W. H. Reid.

A. O. C. AFRICAN OWLS.

Cocks, 2—1st and 2nd, W. H. Reid. *Hens, 2*—1st and 2nd. W. H. Reid.

ENGLISH OWLS, ANY VARIETY.

Cocks, 2—1st, C. H. Currier; 2nd, A. & T. Readwin. *Hens, 1*—1st, W. H. Reid.

A. O. V. OWLS.

Cocks, 2—1st and 2nd, W. H. Reid. *Hens, 2*—1st and 2nd, W. H. Reid.

BLACK TURBITS.

Cocks, 4—1st and 2nd, Bert Sheward. *Hens, 4*—1st and 2nd, Bert Sheward.

BLUE TURBITS.

Cocks, 2—1st and 2nd, Bert Sheward. *Hens, 3*—1st and 2nd, Bert Sheward.

A. O. C. TURBITS.

Cocks, 3—1st and 2nd, Bert Sheward. *Hens, 3*—1st and 2nd, Bert Sheward.

A. O. S. VARIETY.

Cocks, 4—1st, J. V. McAree; 2nd, C. H. Currier.
Hens, 4—1st, C. H. Currier; 2nd, J. V. McAree.

BELGIAN HARES OVER 6 MONTHS.

Males, 1—1st, George Robertson. *Females, 1*—1st, George Robertson.

BELGIAN HARES UNDER 6 MONTHS.

Males, 1—1st, George Robertson. *Females, 1*—1st, George Robertson.

SELLING CLASS

DORKINGS.

Males, 4—1st, W. H. Reid; 2nd, J. & G. Bogue; 3rd, McDougall & Bedlow.
Females, 6—1st, W. H. Reid; 2nd, G. & J. Bogue; 3rd, McDougall & Bedlow.

BRAHMAS.

Males, 3—1st, C. C. Cornish; 2nd, Chas. LaRose; 3rd, McDougall & Bedlow.
Females, 4—1st and 3rd, C. C. Cornish; 2nd, Chas. LaRose.

PLYMOUTH ROCKS.

Males, 14—1st, 2nd, and 3rd, F. A. James.
Females, 3—1st, F. A. James; 2nd, M. R. Hoover; 3rd, George Robertson.

WYANDOTTES.

Males, 32—1st and 2nd, B. J. Hunt; 3rd, G. Lake.
Females, 11—1st, G. Lake; 2nd, Hintonburg Poultry Yards; 3rd, M. C. Neate.

RHODE ISLAND REDS.

Males, 8—1st, John I. Gill; 2nd, J. A. Grimes; 3rd, R. L. Wheadon.
Females, 2—1st, R. L. Wheadon; 2nd, John I. Gill.

ORPINGTONS.

Males, 13—1st, Hintonburg Poultry Yards; 2nd, M. C. Neate; 3rd, W. H. Slinn
Females, 9—1st, W. H. Slinn; 2nd, M. R. Hoover; 3rd, A. W. E. Hellyer.

MINORCAS.

Males, 6—1st, L. V. Zavitz; 2nd, R. L. Wheadon; 3rd, J. M. Peaker.
Females, 7—1st, E. R. Frith; 2nd, L. V. Zavitz; 3rd, R. L. Wheadon.

LEGHORNS.

Males, 10—1st and 2nd, Donald McKellar; 3rd, M. R. Hoover.
Females, 9—1st, James Snetsinger; 2nd, D. McKellar; 3rd, J. I. Gill.

FRENCH.

Males, 3—1st, J. H. Warrington; 2nd, G. & J. Bogue; 3rd, Geo. Robertson.
Females, 3—1st, J. H. Warrington; 2nd, G. & J. Bogue; 3rd, Geo. Robertson.

DRESSED POULTRY.

Pair Brahmas or Cochins, Any Variety, 4

1st and 3rd, A. A. Armstrong; 2nd, Chas. LaRose.

Pair Javas, Langshans or Rhode Island Reds, 2.

1st, W. H. Slinn; 2nd, Joseph Tomalin.

Pair Plymouth Rocks, 10

1st, Joseph Tomalin; 2nd, A. A. Armstrong; 3rd, Alex. Dynes

Pair Wyandottes, 10.

1st and 2nd, G. Higman, Sr.; 3rd, A. A. Armstrong.

Pair Minorcas, Andalusians, or Leghorns, 5.

1st, Joseph Tomalin; 2nd, A. A. Armstrong; 3rd, W. H. Slinn.

Pair Orpingtons, 8.

1st, Joseph Tomalin; 2nd and 3rd, W. H. Slinn.

Pair Games, 1.

1st, Chas. LaRose.

Pair French, 1.

1st, W. H. Slinn.

Best Pair Fowls.

1st, Joseph Tomalin.

Turkey, Any Age, Male, 2.

1st, Joseph Tomalin; 2nd, Jas. Snetsinger.

Turkey, Any Age, Female, 3.

1st, Joseph Tomalin; 2nd and 3rd, James Snetsinger.

Turkey, 1908, Male, 4.

1st, James Snetsinger; 2nd, Joseph Tomalin; 3rd, George R. Bradley.

Turkey, 1908, Female, 4.

1st, Geo. R. Bradley, 2nd and 3rd, James Snetsinger.

Geese, 1908, White, 2.

1st, Joseph Tomalin; 2nd, A. Thompson.

Geese, 1908, Colored, 5.

1st, Jas. Snetsinger; 2nd and 3rd, A. Thompson.

Pair Ducks, 1908, White, 3.

1st, A. Thompson: 2nd, Joseph Tomalin; 3rd, Jas. Snetsinger.

Pair Ducks, 1908, Colored, 3.

1st and 3rd, Jos. Tomalin; 2nd, A. Thompson.

Dozen Colored Eggs, 2.

1st, Geo. R. Bradley: 2nd, W. H. Slinn.

Pair Squabs, 7.

1st, 2nd, and 3rd, C. H. Currier.

POULTRY SPECIALS.

Light Brahmas—Best cock, H. W. Partlo; best cock, hen, cockerel and pullet, H. W. Partlo.

Brahmas—Best collection, H. W. Partlo.

Cochins—Best collection, R. Oke.

Barred Plymouth Rocks—Best cock, John Pringle; best hen, F. A. James; best cockerel, John A. Lambertus; best pullet, John Pringle; best cock, hen, cockerel and pullet, John Pringle; best collection, John Pringle.

White Plymouth Rocks—Best male, Geo. Robertson; best female, George Robertson. Whitest bird, Geo. Robertson, best cock, hen, cockerel and pullet, Geo. Robertson.

Buff Plymouth Rocks—Best collection, Hintonburg Poultry Yards.

Plymouth Rocks, Except Barred—Best cock hen, cockerel and pullet, Hintonburg Poultry Yards.

Plymouth Rocks—Best cock, hen, cockerel and pullet, Hintonburg Poultry Yards.

Golden Wyandottes—Best collection, J. H. Magill.

Silver Wyandottes—Best collection, Hintonburg Poultry Yards.

Buff Wyandottes—Best cockerel, Tooker & Bowey.

White Wyandottes—Best cock, Jos. Russell; Best Hen—Joseph Russell; best cockerel, Highland Park Poultry Yards; best pullets, Highland Park Poultry Yards; best cock and hen, Joseph Russell; best cock, hen, cockerel and pullet, Joseph Russel.

Partridge Wyandottes—Best young pair, Geo. Higman, Jr.; best collection, J. E. Fidler.

Columbian Wyandottes—best collection, E. R. Frith.

Wyandottes—Best cock, hen, cockerel and pullet, G. & J. Bogue.

Wyandottes, Except White—Best cock, hen, cockerel and pullet, Hintonburg Poultry Yards.

Javas—Best collection, G. & J. Bogue.

R. C. Rhode Island Reds—Best collection, Hintonburg Poultry Yards.

S. C. Rhode Island Reds—Best collection, Wheadon & Pearson.

Rhode Island Reds—Best cock, hen, cockerel and pullet, Hintonburg Poultry Yards.

Duckwing Games—Best cock, hen, cockerel and pullet W. Barber.

Old English or Pit Games—Best cock, hen, cockerel and pullet, E. H. Benjamin.

Any Standard Variety Games—Best cock, hen, cockerel and pullet, W. Barber.

S. C. White Leghorns—Best cock, James L. McCormick; best hen, James L. McCormick; best cockerel, Jas. L. McCormick; 2nd best cockerel, W. H. Carleton; 3rd best cockerel, F. Wales; best pullet, W. H. Carleton; 2nd, best pullet, Donald McKellar; 3rd, best pullet, W. H. Carleton; best cock, hen, cockerel and pullet, Jas. L. McCormick.

S. C. Brown Leghorns—Best collection, G. H. A. Collins.
S. C. Black Leghorns—Best female, Geo. Robertson; best cockerel, W. N. Osborne; best collection, W. M. Osborne.
Leghorns, Except S. C. White—Best cock, hen, cockerel and pullet, George Robertson.
Leghorns—Best cock, cockerel and pullet, Jas. L. McCormick.
Spanish—Best black cock, G. & J. Bogue; best male, G. & J. Bogue; best female, J. H. Warrington.
Black Minorcas—Best collection, L. V. Zavitz.
Minorcas—Best male, L. V. Zavitz; best female, L. V. Zavitz; best cock, hen, cockerel and pullet, A. C. Moyer.
S. C. Buff Orpingtons—Best cock, A. W. E. Hellyer.
Buff Orpingtons—Best cock, A. W. E. Hellyer; best hen, A. W. E. Hellyer; best cockerel, A. W. E. Hellyer; best pullet, A. W. E. Hellyer; best male, A. W. E. Hellyer; best collection, A. W. E. Helyer; best cock, hen, cockerel and pullet, A. W. E. Hellyer.
White Orpingtons—Best male, Jas. Snetsinger; best female, Jas. Snetsinger; best collection, Jas. Snetsinger.
A. O. V. Orpingtons—Best male, Hamilton & Scoyne; best female, Hintonburg Poultry Yards; best collection, Hamilton & Scoyne.
Orpingtons, Except Buff—Best cock, hen, cockerel and pullet, Jas. Snetsinger.
Silver Grey Dorkings—Best collection, McDougall & Bedlow.
Colored Dorkings—Best collection, J. H. Warrington.
White Dorkings—Best collection, J. H. Warrington.
Houdans—Best collection, G. & J. Bogue.
Any Variety French, Except Houdans—Best collection, G. & J. Bogue.
French—Best male, G. & J. Bogue, best female, G. & J. Bogue.
Hamburgs—Best male, R. Oke; best female, H. Baptie, best collection, any one variety, R. Oke.
Polands—Best male, Wm. McNeil, best female, Wm. McNeil.
Best Collection, Any One Variety—Wm. McNeil.
A. O. S. V. Fowls—Best male, G. & J. Bogue; best female, G. & J. Bogue.
Old English Game Bantams Spangled—Best cock and hen, P. E. Aird.
Game Bantams—Best collection, Rook Bros.; best cock, hen, cockerel and pullet, Rook Bros.; best shaped male in pyle, brown, red or duckwings, Mutchmore & Co.
Cochin Bantams—Best collection, any variety, Wheadon & Pearson.
Bantams, Other than Game—Best cock, hen, cockerel and pullet, Wheadon & Pearson.
Bantams—Best male, R. Oke; best female, R. Oke.
Turkeys—Best collection, any variety, A. Thompson.
Geese—Best collection, any variety, A. Thompson.
Rouen Ducks—Best young drake, Baker Bros.
Cayuga Ducks—Best young drake, Baker Bros.
Ducks—Best collection, any variety, G. & J. Bogue.

PIGEONS.

Best Blue Pouter Cock—John A. Belford.
Best Pair Red-Bearded L. F., C. L. Tumblers—Hiawatha Pigeon Lofts.
Best Pair of Silver Dun Antwerps—W. H. Reid.
Best Black Barb Cock—C. H. Currier.
Best Blue Pouter Hen—J. H. Magill.
Best Pair Black Barbs—C. H. Currier.
Best White Jacobin—C. H. Currier.
Best Black Jacobin—W. H. Reid.
Best Black Magpie—Mutchmore & Co.
Best Yellow Magpie—Mutchmore & Co.
Best Blue-Chequered Homer—John A. Belford.
Best Blue Homer—R. E. Blakeley.
Best Collection of Trumpeters, Jacobins, or Dragoons—W. H. Reid.

General Specials.

Best Three Dressed Cockerels or Pullets, Incubator Hatched—A. W. E. Hellyer.
Best Cock, Hen, Cockerel and Pullet of Utility Breed—H. W. Partlo.
Best Bird in Show—John Pringle.
Whitest Bird in Show—George Robertson.

MEMBERS OF DOMINION CATTLE BREEDERS' ASSOCIATION. 1908 AND 1909.

Name and Address.	Breed.
Abbot, Fred., Harrietsville	Holstein-Friesian.
Adams, E. D., Calgary, Alta	Galloway.
Adamson, Edgar, Erindale	Holstein-Friesian.
Archer, T. J., Warwick	Hereford.
Armstrong, Hugh, Rosemont	Hereford.
Armstrong, M., Tilsonburg	Holstein-Friesian.
Bailey, W. J., Nober	Holstein-Friesian.
Bald, Wm. J., Sebringville	Holstein-Friesian.
Baldwin, Geo. A., Dunnville	Holstein-Friesian.
Bales, O. D., Lansing	Holstein-Friesian.
Ballantyne, W. W., Stratford	Ayrshire.
Barber, Frank, Villa Nova	Holstein-Friesian.
Barnett, Robert, Curries	Holstein-Friesian.
Barr, B. R., Harrietsville	Holstein-Friesian.
Barton, John H., Vankleek Hill	Ayrshire.
Bedgood, Thos. E., McWilliams	Holstein-Friesian.
Begg, James, Box 88, St. Thomas	Ayrshire.
Begg, Victor, Moose Creek	Ayrshire.
Bell, Wm., V.S., Vars	Ayrshire.
Bennett, Walter, Chatham	Hereford.
Benning, J., Williamstown	Ayrshire.
Binnie, Jas., Erin	Aberdeen-Angus.
Blayney, J. E., Lynnville	Holstein-Friesian.
Bogart, J. W., Morewood	Ayrshire.
Bollert, H., Cassel	Holstein-Friesian.
Bowley, Walter W., Napperton	Ayrshire.
Bowman, Jas., Guelph	Aberdeen-Angus.
Bowyer, C. W., Carholme	Holstein-Friesian.
Boyd, Mossom & Co., Bobcaygeon	Hereford.
Boyd, N., Carberry, Man	Galloway.
Broadfoot, T. D., Fergus	Aberdeen-Angus.
Brock, R. B., Jarvis	Holstein-Friesian.
Brown, John, Oxford Centre	Holstein-Friesian.
Brown, John C., Stamford	Holstein-Friesian.
Bryant, Wm. A., Cairngorm	Holstein-Friesian,
Buchanan, John, Elia	Holstein-Friesian.
Buckrell, John, Beaconsfield	Holstein-Friesian.
Burt, D., St. George	Holstein-Friesian.
Burt, J. W., Coningsby	Aberdeen-Angus.
Buskin, Wesley, Flesherton	Hereford.
Butler, Edwin, Norwich	Holstein-Friesian.
Callender, James, North Gower	Ayrshire.
Campbell, John, Dalmeny	Ayrshire.
Campbell, John, Vankleek Hill	Ayrshire.
Carlisle, G. F., Newton Brook	Holstein-Friesian.
Caughell, David, Yarmouth Centre	Holstein-Friesian.
Caughell, G. H., Middlemarch	Holstein-Friesian.
Central Experimental Farm, Ottawa	Ayrshire.
Chambers, Edwin C., Fairfield Plains	Holstein-Friesian.
Christie, Peter, Manchester	Shorthorns.
Clare, Herbert, Norwich	Holstein-Friesian.
Clarke, Alex., Brimston's Corners	Ayrshire.
Clarke, R. C. & Co., Hammond	Ayrshire.
Clarke, Wm., Myersburg	Ayrshire.
Clarke, Wm. H., Summerlea	Ayrshire.
Clarke, Harry, Schomberg	Hereford.
Clarkson, John, Summerville	Holstein-Friesian.
Clemons, G. W., St. George	Holstein-Friesian.
Clifford, L. O., Oshawa	Hereford.
Cline, John W., Boston	Holstein-Friesian.
Clute, Justice R. C., Toronto	Ayrshire.
Cohoe, D. B., New Durham	Holstein-Friesian.
Cohoe, D. P., New Durham	Holstein-Friesian.
Cohoe, J. W., New Durham	Holstein-Friesian.
Cohoon, Emerson, Harrietsville	Ayrshire.
Coke, J., Erin	Aberdeen-Angus.
Colbeck, Thos., Grand Valley	Hereford.
Comfort, Alvin M., Elcho	Ayrshire.
Cook, B. G., Ingersoll	Holstein-Friesian.
Cudmore, Chas, Sprucedale	Hereford.
Cryderman, F. S., Osnabruck Centre	Ayrshire.
Cumberland, Barlow, Port Hope	Ayrshire.
Cumming, A. J., Heckston	Ayrshire.
Cumming, Donald, Lancaster	Ayrshire.
Darrach, E. J., Pendleton	Ayrshire.
Davis, Geo. & Sons, Alton	Aberdeen-Angus.
Death, Geo. T., Dixie	Holstein-Friesian.
Deeks, John, Dunbar	Ayrshire.
Dennis, Edgar, Newmarket	Holstein-Friesian.
Dent, T. H., Woodstock	Holstein-Friesian.
Denyes, H. J., Foxboro	Ayrshire.
Dingwell, James, Williamstown	Ayrshire.

MEMBERS OF THE DOMINION CATTLE BREEDERS' ASSOCIATION, 1908 AND 1909.—*Continued.*

Name and Address.	Breed.
Doring, F. L. A., Clarence	Ayrshire.
Douglas, Jas., Caledonia	Shorthorn.
Duff, John, Rockwood	Galloway.
Dunkin, T. L., Norwich	Holstein-Friesian.
Dunn, Andrew, Ingersoll	Holstein-Friesian.
Dyment, N., Clappison's Corners	Ayrshires.
Dyment, S., Barrie	Shorthorn.
Eadie, A. G., Vars	Ayrshire.
Eastman, John W., Russell	Ayrshire.
Ede, P. D., Oxford Centre	Holstein-Friesian.
Edmondson, Chris., Brantford	Holstein-Friesian.
Elliott, Geo. S., Tillsonburg	Holstein-Friesian.
Elliott, W. F., Coleman	Holstein-Friesian.
Emmett, C. D., South End	Holstein-Friesian.
Empey, Adam, Springfield	Ayrshire.
Fairbairn, T., Billing's Bridge	Ayrshire.
Farlinger, W. K., Morrisburg	Ayrshire.
Ferguson, Fred. S., Inverary	Holstein-Friesian.
Ferguson, Geo. A., Tillsonburg	Holstein-Friesian.
Ferguson, John, Camlachie	Ayrshire.
Fierheller, C. D., Mount Elgin	Holstein-Friesian.
Fierheller, E. E., Mount Elgin	Holstein-Friesian.
File, Dr. A. J., Ameliasburg	Ayrshire.
Fisher, M. Vicars, Glanworth	Holstein-Friesian.
Flatt, D. C., Millgrove	Holstein-Friesian.
Flatt, John I., Millgrove	Holstein-Friesian.
Fleming, Henry, Craigleith	Hereford.
Forester, M. A. S., Oakville	Aberdeen-Angus.
Forget, Rev. J. W., Russell	Ayrshire.
Fraser, Mrs. Agnes, Weston	Holstein-Friesian.
Fyles, F. F., Abercorn	Ayrshire.
Gardhouse, John, Highfield	Shorthorn.
Gies, C. R., Heidelburg	Holstein-Friesian.
Gilbert, H. J., Dereham Centre	Holstein-Friesian.
Gillies, Wm., Robb	Hereford.
Gilmen Bros., Rossmere	Ayrshire.
Gilroy, Jos., Lyn	Ayrshire.
Gleason, Reuben, Medina	Holstein-Friesian.
Gregg, F. H., Salford	Holstein-Frieaian.
Griffin, F. J., Burgessville	Holstein-Friesian.
Groat, Charles, Brooklin	Shorthorn.

Name and Address.	Breed.
Guy, F. T., Darlington	Ayrshire.
Haley, M. H., Springford	Holstein-Friesian.
Haley, M. L., Springford	Holstein-Friesian.
Hall, Walter, Washington	Aberdeen-Angus.
Hallman, A. C., Breslau	Holstein-Friesian.
Hamill, H. C., Islay	Ayrshire.
Hamilton, Richard, Rosemere	Ayrshire.
Hanmer, E. E., Norwich	Holstein-Friesian.
Hanmer, Willoughby, New Durham	Holstein-Friesian.
Harris, Frank, Mount Albert	Ayrshire.
Harrison, W. H., Mount Albert	Hereford.
Harrison, Frank, Mount Albert	Hereford.
Harrison, Geo., Kincardine	Holstein-Friesian.
Harrison, Jas. E., Kincardine	Holstein-Friesian.
Harrison, Josh., York Mills	Holstein-Friesian.
Hartley, Miles, Norwich	Holstein-Friesian.
Hartley, Stephen, New Durham	Holstein-Friesian.
Hartley, Thomas, Downsview	Holstein-Friesian.
Hartley, W. A., New Durham	Holstein-Friesian.
Heeney, Fred. V., Ingersoll	Holstein-Friesian.
Hendy, Chas., Campbellford	Ayrshire.
Hensman, W. G., Essex	Ayrshire.
Herbst, Geo., Alsfeldt	Holstein-Friesian.
Herron, J. H., Courtland	Holstein-Friesian.
Hicks, R. F., Newtonbrook	Holstein-Friesian.
High, Isaac W., South Cayuga	Holstein-Friesian.
Hill, Jas. J., Speedside	Hereford.
Hill, J. W., St. Thomas	Holstein-Friesian.
Holtby, Benj., Belmont	Holstein-Friesian.
Homer-Dixon, Mrs., Niagara Falls South	Ayrshire.
Hulet, A. E., Norwich	Holstein-Friesian.
Hume, A. & Co., Menie	Ayrshire.
Hunt, B. J., Ottawa South	Ayrshire.
Hunt, John, Russell	Ayrshire.
Hunter, A. S., Durham	Hereford.
Hunter, J. J., Durham	Hereford.
Hunter, Robert, Sr., Maxville	Ayrshire.
Hunter, R. R., Maxville	Ayrshire.
Hunter, Wm., Maxville	Ayrshire.
Hunter, W. H., The Maples	Hereford.
Immerson, C. J., Lyn	Ayrshire.

Irwin, H. D., Markdale.....Galloway.
James, D. A., Nilestown.....Ayrshire.
Jardin, David S., Nelson.....Holstein-Friesian.
Jickling, J. B., Carman, Man.....Galloway.
Jerome, Holbert, Glanford.....Holstein-Friesian.
Johnson, Wm. H., Avon.....Holstein-Friesian.
Jull, Geo., Ranelagh.....Holstein-Friesian.
Kains, Alfred, Byron.....Ayrshire.
Kellington, John, Ravenshoe.....Shorthorn.
Kelly, Byron, Kelvin.....Holstein-Friesian.
Kelly, Arthur, Vanessa.....Holstein-Friesian.
Kelly, R. J., Hagersville.....Holstein-Friesian.
Kemp, Albert, Forest.....Hereford.
Kennedy, A., Ayr.....Holstein-Friesian.
Kennedy, Archie & Sons, Vernon.....Ayrshire.
Ketchen, Geo. A., Wallbridge.....Ayrshire.
Kinsey, James, Doon.....Ayrshire.
Kitchen, D. D., Renton.....Holstein-Friesian.
Kitchen, Frederick D., Renton.....Holstein-Friesian.
Kitchen, S. G., St. George.....Holstein-Friesian.
Knight, Joshua, Elginburg.....Ayrshire.
Laidlaw, E. W. H., Aylmer.....Holstein-Friesian.
Laidlaw, Geo. A., Aylmer.....Holstein-Friesian.
Laidlaw, Lloyd K., Aylmer.....Holstein-Friesian.
Lambkin, W. L., Fordwich.....Holstein-Friesian.
Lear, F. L., Orland.....Ayrshire.
Lee, J. W., Simcoe.....Holstein-Friesian.
Lee, R. S., Williamsford.....Hereford.
Leeson, F., Aylmer.....Holstein-Friesian.
Leeson, Geo. M., Varney.....Hereford.
Leitch, D., Cornwall.....Ayrshire.
Lemon, Samuel, Lynden.....Holstein-Friesian.
Lester, H. A., Burford.....Holstein-Friesian.
Livingstone, Isabella, Grimsby.....Ayrshire.
Locke, John, Campbellford.....Ayrshire.
Lorch, Albert, Elmira.....Holstein-Friesian.
Loveless, R. M., Agincourt.....Holstein-Friesian.
Lovering, J. A., Lovering.....Hereford.
Low, John, Elora.....Aberdeen-Angus.
Mackie, R. J., Oshawa.....Hereford.
Macklin, S., Weston.....Holstein-Friesian.
Martin, R. B., Elmira.....Holstein-Friesian.
Mason, Wm. E., Tyrrell.....Holstein-Friesian.
Melick, Aaron, Smithville.....Ayrshires.
Michener, Martin, Dunnville.....Ayrshire.

Miller, Robert J., Fonthill.....Holstein-Friesian.
Mitchell Bros., Norham.....Hereford.
Mitchell, Wm., Lancaster.....Ayrshires.
Mittlefehldt, A., Elcho.....Holstein-Friesian.
Mittlefehldt, J. H., Elcho.....Holstein-Friesian.
Mode, D. G., Vankleek Hill.....Ayrshires.
Montmorency, Geo. de., Woodstock.....Holstein-Friesian.
Moore, Benj. L., Burgessville.....Holstein-Friesian.
Moore, Sam D., New Dublin.....Ayrshire.
Motheral, James, Drumbo.....Holstein-Friesian.
Moynihan, J., Don.....Holstein-Friesian.
Murray, B. J., Martintown.....Ayrshire.
McCaskill, Alex., Barb.....Ayrshire.
McConkey, R. J., Stroud.....Hereford.
McConnell, Ross, Luton.....Ayrshire.
McCormick, Chas. R., Ratho.....Holstein-Friesian.
McCrae, David, Guelph.....Galloway.
McCubbin, John, Warkworth.....Ayrshire.
McDonald, F. E., Picton.....Ayrshire.
McDowell, M., Norwich.....Holstein-Friesian.
McEwing, A. W., Harlock.....Aberdeen-Angus.
McFarland, G. A., Preston Vales.....Ayrshire.
McGhee, S. J., Beachville.....Holstein-Friesian.
McGhee, Robert, Beachville.....Holstein-Friesian.
McInnis, J. D., Glenpayne.....Ayrshire.
McIntosh, Peter, Cass Bridge.....Ayrshire.
McIntyre, Wm., Newington.....Ayrshire.
McKee, H. & J., Norwich.....Ayrshire.
McKenzie, Angus, Vankleek Hill.....Ayrshire.
McKenzie, John, Willowdale.....Holstein-Friesian.
McKenzie, G. H., Thornhill.....Holstein-Friesian.
McKinnon, A., Hillsburg.....Aberdeen-Angus.
McKinnon, R. W., Coningsby.....Aberdeen-Angus.
McKinny, Alex., Erin.....Aberdeen-Angus.
McLaren, P. S., McGarry.....Ayrshire.
McLean, W. J., Elm Grove.....Hereford.
McLennan, John, Laggan.....Ayrshire.
McLeod, W. L., Kirkhill.....Ayrshire.
McLeod, John D., Moose Creek.....Ayrshire.
McLoud, James, Plainville.....Aberdeen-Angus.
McMaster, J. A., Summertown.....Ayrshire.
McMannus, J. P. & C., Enterprise.....Ayrshire.
McMillan Bros., Dunbar.....Ayrshire.
McMillan, D. E., Laggan.....Ayrshire.
McQueen, T. W., Tillsonburg.....Holstein-Friesian.

MEMBERS OF THE DOMINION CATTLE BREEDERS' ASSOCIATION 1908 AND 1909.—*Concluded.*

Name and Address.	Breed.
Nelles, Lorne C., Boston	Holstein-Friesian.
Newton, J. L., Chapman	Ayrshire.
Nichols, Ira, Norwich	Holstein-Friesian.
Nixon, Wm. L., Ingersoll	Holstein-Friesian.
Nixon, Howden, Ingersoll	Holstein-Friesian.
North, Geo., Guelph	Holstein-Friesian.
Oliver, Geo., Bright	Holstein-Friesian.
Ontario Agricultural College, Guelph	Hereford, Ayrshires.
O'Neil Bros., Maple Grove	Hereford.
Owens, S. W., Antrim	Ayrshire.
Pallett, Geo. Wm., Summerville	Holstein-Friesian.
Palmer, B. J., New Durham	Holstein-Friesian.
Palmer, Geo. R., Summertown	Ayrshire.
Parks, Thos. J., Orangeville	Hereford.
Paterson, T. G., Rayside	Holstein-Friesian.
Patten, Walter, St. George	Holstein-Friesian.
Peacock, Grace E., Mt. Salem	Holstein-Friesian.
Pearce, Arthur, Cornell,	Holstein-Friesian.
Pearce, Thos., Cornell	Holstein-Friesian.
Pearce, W. M., Tillsonburg	Holstein-Friesian.
Penhall, R. A., St. Thomas	Holstein-Friesian.
Percival, G. W., Glen Buell	Ayrshire.
Pettit, F. E., Burgessville	Holstein-Friesian.
Poole, Chauncey, Norwich	Holstein-Friesian.
Poole, Samuel, Norwich	Holstein-Friesian.
Pound, Wm. F., Bayham	Holstein-Friesian.
Prouse, G. T., Ostrander	Holstein-Friesian.
Prouse, Wm., Dereham Centre	Holstein-Friesian.
Prouse, Thos., Dereham Centre	Holstein-Friesian.
Rennie, Wm., Menie	Ayrshire.
Reed, H., Mimosa	Hereford.
Reid, Wm., Mnrillo	Ayrshire.
Reid, H. J., Epping	Hereford.
Rettie, Jas., Norwich	Holstein-Friesian.
Rice, Geo., Tillsonburg	Ayrshire.
Richardson, J. W., Caledonia	Holstein-Friesian.
Richardson, Matt., Caledonia	Holstein-Friesian.
Rife, David, Hespeler	Holstein-Friesian.
Rife, Wm. A., Hespeler	Holstein-Friesian.
Ritchie, W. L., Saurin	Hereford.
Rivers, Walburn, Foldens	Holstein-Friesian.
Robbins, Collver V., Wellandport	Holstein-Friesian.
Robertson, David, M.D., Milton	Holstein-Friesian.
Robinson, A. E., Markham	Holstein-Friesian.
Roblin, W. H. C., Ameliasburg	Ayrshire.
Robson, John G., Ilderton	Shorthorn.
Rogers, A. S., Sparta	Holstein-Friesian.
Row, Fred., Curries	Holstein-Friesian.
Sandilands, John, Williamstown	Ayrshire.
Schell, Walter S., Woodstock	Holstein-Friesian.
Schiefele, A. W., Heidelberg	Holstein-Friesian.
Sexsmith, M. W., Ridgeway	Ayrshire.
Shaffner, F. L., Boissevain, Man.	Galloway.
Shannon Bros., Arnprior	Hereford.
Sharp, Jas., Rockside	Aberdeen-Angus.
Shaw, Robert, Brantford	Galloway.
Shearer, Wm. S., Listowel	Holstein-Friesian.
Shellington, Robert, Harley	Holstein-Friesian.
Sheriff, W. & G. G., Clarence	Ayrshire.
Shuttleworth, H. P., Ingersoll	Holstein-Friesian.
Sifton, Chas, Cairngorm	Holstein-Friesian.
Simmons, W. H., New Durham	Holstein-Friesian.
Simpson, Jas., South Augusta	Ayrshire.
Sinclair, Thos. B., Brigdon	Holstein-Friesian.
Skippon, Thos., Hyde Park	Hereford.
Slaght, Wm., Bealton	Holstein-Friesian.
Sloper, Wm., Cobourg	Ayrshire.
Smiley, S. H., St. Thomas	Holstein-Friesian.
Smith, A. E., Millgrove	Holstein-Friesian.
Smith, C. E., Scotland	Holstein-Friesian.
Smith, G. W., Dundas	Holstein-Friesian.
Smith, H. D., Hamilton	Hereford.
Smith, Ozra, Tyrrell	Holstein-Friesian.
Smith, Robert, Millgrove	Holstein-Friesian.
Smith, Wm. C., Burgessville	Holstein-Friesian.
Snyder, Elias, Burgessville	Holstein-Friesian.
Somers, John, Rockford	Holstein-Friesian.
Stephens, Byron, Brigden	Holstein-Friesian.
Stewart, Fred., Elfrida	Holstein-Friesian.
Stewart, Jas. A., Menie	Ayrshire.
Stewart, Wm., jr., Menie	Ayrshire.
Stone, Alfred, Guelph	Hereford.

Strobridge, Frank, Thamesford ..... Holstein-Friesian.
Stroud, Thos., Tillsonburg ..... Holstein-Friesian.
Stutt, R. W., Forest ..... Hereford.
Suddaby, Milton, Heckston ..... Ayrshire.
Suhring, Otto, Sebringville ..... Holstein-Friesian.
Suhring, Wm., Sebringville ..... Holstein-Friesian.
Swance, B., Tillsonburg ..... Holstein-Friesian.
Tackell, Wm., Zenda ..... Holstein-Friesian.
Tapley, W. F., Norwich ..... Holstein-Friesian.
Taylor, F. W., Wellman's Corners ..... Ayrshire.
Taylor, J. H., Scotland ..... Holstein-Friesian.
Taylor, John J., Cassburn ..... Ayrshire.
Teeft, Thaddeus N., Smithville ..... Ayrshire.
Teeple, A. H., Curries ..... Holstein-Friesian.
Telfer, John B., Milton ..... Galloway.
Telfer, Thos. G., Ingersoll ..... Holstein-Friesian.
Thomson, Wm. E., Woodstock ..... Holstein-Friesian.
Thomson, P. A., Hillsburg ..... Aberdeen-Angus.
Thorn, W., Lyndoch ..... Ayrshire.
Tran, W. H., Cedar Grove ..... Ayrshire.
Treffry, W. J., Hawtrey ..... Holstein-Friesian.
Usher, Isaac, Queenston ..... Ayrshire.
Van Patter, J. M., Luton ..... Holstein-Friesian.
Varco, John, Carlow ..... Aberdeen-Angus.
Wagler, C., Baden ..... Holstein-Friesian.
Walker, Chas. E., Norwich ..... Holstein-Friesian.
Walker, Wm., Carluke ..... Holstein-Friesian.
Walker, A. T., Beaconsfield ..... Holstein-Friesian.
Wallace, Oswald, Burgessville ..... Holstein-Friesian.
Ward, R. G., Springvale ..... Holstein-Friesian.
Warring, J. Edward, Newark ..... Holstein-Friesian.
Warnica, Asa., Painswick ..... Hereford.
Watson, T. & J., Proton Station ..... Hereford.
Watt, Alex., Lancaster ..... Ayrshire.
Weaver, Roy H., Norwich ..... Holstein-Friesian.
Welsh, Henry, Weston ..... Holstein-Friesian.
White, John S., Forest ..... Hereford.
Whittaker & Sons, H. J., Williamsburg ..... Ayrshire.
Williams, Albert, Port Perry ..... Shorthorn.
Willis, Jr., R., Aylmer ..... Holstein-Friesian.
Willson, E. P., Willsonville ..... Holstein-Friesian.
Wilson, J. Lockie, Toronto ..... Ayrshire.
Wood, Tig, Mitchell ..... Holstein-Friesian.
Woodley, Fred. V., Boston ..... Holstein-Friesian.
Woodley, Elmer V., Waterford ..... Holstein-Friesian.
Woods, John G., New Hamburg ..... Holstein-Friesian.
Woodley, Geo. L., Villa Nova ..... Holstein-Friesian.
Wright, H. D., Canora, Sask ..... Galloway.
Wyckoff, D. J., Norwich ..... Holstein-Friesian.
Wyckoff, I. G., Tyrrell ..... Holstein-Friesian.
Yates, Philip, Athens ..... Ayrshire.
Yates, Mahlon, Athens ..... Ayrshire.
Young, Samuel, Guelph ..... Aberdeen-Angus.
Zoeller, A. M., New Hamburg ..... Holstein-Friesian.

MEMBERS OF DOMINION SHEEP BREEDERS' ASSOCIATION, 1908 AND 1909.

Allan, John, Orillia ..... Leicester.
Allin Bros., Newcastle ..... Leicester.
Allison, Geo., Burnbank, Man ..... Leicester.
Alton, J. B., Milton ..... Leicester.
Andrews, Geo., Millfield, Que ..... Leicester.
Arkell, Henry & Son, Arkell ..... Oxford Down.
Armstrong, Jas., Shawville, Que ..... Oxford Down.
Armstrong W. A., Shawville, Que ..... Leicester.
Arthur, Fred A., Knowlton, Que ..... Leicester.
Aulesbrook, Wm., Paris ..... Shropshire.
Bagshaw, W. A., Uxbridge ..... Cotswold.
Baker, G. W. A., Oakville ..... Dorset.
Baker, Geo., Simcoe ..... Southdown.
Baker & Sons, J. E., Barronsfield, N.S. ..... Oxford Down.
Barber, John, Salem ..... ———.
Barnett, Wm., Living Springs ..... Oxford Down.
Barr, John, Blyth ..... ———.
Bater Bros., Trafalgar ..... ———.
Baxter, David, North Georgetown, Que ..... Leicester.
Beattie, Wm. J., Lemesurier, Que ..... Leicester.
Beaudoin, P. A., Montreal, Que ..... Oxford Down.
Bellemare, Adrien, Yamachiche, Que ..... Leicester.
Bellerose, Dephis, St. Elizabeth, Que ..... Cotswold.
Bennett, D., Edenville ..... Shropshire.
Bergerson, Arthur, St. Pie, Que ..... Leicester.
Biggs, F. C., West Flamboro ..... Hampshire.
Boswell, A. H., Marshfield, P.E.I. ..... Oxford Down.
Boutet, James, Victoriaville, Que ..... Leicester.
Bourassa, Theo., Yamachiche, Que ..... Leicester.
Bowman, James, Guelph ..... Suffolk, Dorset.

MEMBERS OF DOMINION SHEEP BREEDERS' ASSOCIATION FOR 1908 AND 1909.—*Continued.*

Name and Address.	Breed.
Brien, E. & Son, Ridgetown	Cotswold.
Brisson, T., Warwick, Que	Leicester.
Brown, David, St. Joachim, Que	Leicester.
Bryson, James, Brysonville, Que	Leicester.
Camirand, Louis, Point-du-Lac, Que	Leicester.
Campbell, P. M., Balderson	Oxford Down.
Campbell, John, Woodville	Shropshire.
Campbell, Julien, Stanbridge Sta., Que	———.
Campbell, Peter J., Breadalbane	Leicester.
Cavan, G. W., Box 1052, Toronto	Southdown.
Central Experimental Farm, Ottawa	Shropshire, Dorset.
Cerswell, J. A., Bond Head	Oxford Down.
Chartier, Albert, St. Paul l'Ermite, Que	Oxford Down.
Chretien, J. Bte., Bennet, Que	———.
Christie, Peter, Manchester	Shropshire.
Cleland, Jas. R., Genoa, Que	Leicester.
Cloutier, N., Banlier, de Trois Rivieres, Que	Leicester.
Cloutier, Jos., Riviere Aux Chiens, Que	Leicester.
Colson, John, Hornby	———.
Connell, Tim, Vine	Cotswold.
Cote, Samuel, Rimouski, Que	———.
Cottrelle, G. R., Toronto	———.
Cousins, John & Son, Harriston	Oxford Down.
Coutee, Pierre, St. Felix de Valois, Que	Cotswold.
Couture, Frs., St. Augustine, Que	Leicester.
Couture, Jos., Lorette, Que	Leicester.
Creighton, Robert, Genoa, Que	———.
Dauphin, Felix, St. Elizabeth, Que	Cotswold.
Denis, Arsene, St. Norbert, Berthier, Que	Shropshire, Lincoln, Cotswold and Leicester.
Dillon, Jacob, Ellisville	Shropshire.
Douglas, James, Caledonia	Leicester.
Dominion Experimental Farm, Nappan, N.S.	Leicester.
Drummond, Sir Geo., Beaconsfield, Que	Southdown.
Dryden, Wm., Brooklin	Shropshire.
Drysdale, Thos., Allan's Corners, Que	Leicester.
Dunn, J. A., Wooler	Cotswold.
Dufour, Gideon, Dufour, Que	Leicester.
Duprie, Wilfred, Vercheres, Que	Leicester.
Durham, W. H., Box 1052, Toronto	———.
Easton, Abram, Appleby	Leicester.
Edwards, Geo. B., Covey Hill, Que	Leicester.
Enke, Max., Galiano Island, B.C	Shropshire.
Evans, D. & Son, Somenos, B.C	Southdown.
Fitch, J. P., Oriel	Cotswold.
Fontaine, F., Notre Dame de Stanbridge, Que	Leicester.
Ford, W. H., Dutton	Lincoln.
Fortin, Jos. C., Baie St. Paul, Que	Leicester.
Fortier, Paul, St. Pierre, Baptiste, Que	———.
Foster, A. S., Oakville	———.
Frank, R. W., Kingsbury, Que	Leicester.
Freak, E. J., Walton, N.Y	———.
Frechette, Jos., St. Felix de Valois, Que	Cotswold.
Gamley, A. D., Griswold, Man	Leicester.
Garbutt, R. J., Belleville	Leicester.
Garceau, Gideon, Point-du-Lac, Que	Leicester.
Garceau, Phil., Point-du-Lac, Que	Leicester.
Gardhouse, J. M. & Sons, Highfield	Leicester.
Gareau, J. J., St. Roch l'Achigan, Que	Hampshire.
Genest, Johnny, Victoriaville, Que	———.
George, Allan, Paris	Hampshire.
Gibson, J. T., Denfield	Lincoln.
Gibson, W. H., Beaconsfield, Que	———.
Gilroy, John H., Coe Hill	Cotswold.
Gilroy, Joshua, Lyn	Oxford Down.
Glass, Jas., Roxham, Que	Leicester.
Goodall, Wm., St. Louis de Gonzaque, Que	Leicester.
Gormley, Jas. & Son, Pickering	———.
Gosnell, John S., Highgate	———.
Goucher, Alir., St. Damase, St. Hyacinth, Que	Cotswold.
Gouin, Aime, St. Norbert, Que	Leicester.
Graham, F. J., Brittania Bay	Shropshire.
Grenier, Maxime, Bournival, Que	Leicester.
Grills, Jas., Elora	———.
Guerard, Uldaige, St. Felix de Valois, Que	Cotswold.
Gurney, C. G., Paris	———.
Hall, J. W., Bensfort	Leicester.
Hanmer, J. G., Brantford	Shropshire.
Hanmer, D. G., Burford	Shropshire.
Harding, R. H., Thorndale	Dorset Horns.
Hastings Bros., Crosshill	Leicester.
Herbert, Bernard, St. Constant, Que	Leicester.
Heron, J. A., Billings Bridge	———

Hine, Robert J., Dutton.....Oxford Downs.
Hood, G. B., Guelph.....Leicester.
Hodgson, C., Brantford.....———
Ingram, Thos., Manitowaning.....Cotswold.
Innes, Donald, Tobique River, N.B.....Cotswold.
Irving, A., Scotstown, Que.....Leicester.
Jackson, John & Son, Abingdon.....Southdown.
Jasper, Thos., Harding, Man.....Leicester.
Johnston, Peter, Inverness, Que.....Leicester.
Johnston Bros., Underwood.....Leicester.
Johnston, Wm., Mountain Grove.....Leicester.
Kelly, John, Shakespeare.....Hampshire, Leicester.
Kemp, C. R., Hazeldean.....Oxford.
King, John, H., Smith's Creek, N.B.....Shropshire.
Lachapelle, Napoleon, St. Paul l'Ermite, Que.Leicester.
Lachapelle, Edouard, St. Paul l'Ermite, Que.Leicester, Cotswold.
Lafontaine, Edouard, Plessisville, Que.....Leicester.
Lalonde, C., St. Hermas, Que.....Leicester.
Lamarche, H., St. Esprit, Que.....Leicester.
Lamarche, Ismail, St. Esprit, Que.....Leicester.
Lambert, Zepherin, Louisville, Que.....Leicester.
Lang, John, Cairnside, Que.....Leicester.
Lavallee, Paul, Berthierville, Que.....Cotswold.
Lavallee, Louis, St. Guillaume, Que.....———
Lavinge, J. P., St. Gertrude, Que.....Leicester.
Lee, J. W. & Sons, Simcoe.....Oxford.
Legris, Ulderic, St. Leon, Que.....Shropshire.
Lemon, S., Kettleby.....———
Letourneau, E., Ste. Famille, Ile d'Orleans, Que.....Leicester.
Letourneau, Paul Mike, Ste. Famille, Ile d'Orleans, Que.....Leicester.
Levert, Nap., St. Benoit, Que.....Leicester.
Lloyd-Jones Bros., Burford.....Shropshire.
Loiselle, Ovide, St. Maro, Que.....———
Lucas, T. A., Bristol Ridge, Que.....Leicester.
Lupien, L. E., Louisville, Que.....Leicester.
Lyons, S. J., Norval.....Cotswold.
Lyster, C. N., Kirkdale, Que.....Leicester.
Manitoba Agricultural College, Winnipeg, Man.....Leicester.
Manseau, Frs., Nicolet, Que.....Leicester.
Martin, E. E., Canning.....———
May, John, Melbourne, Que.....Leicester.
Mayhew, Orian, Canterbury, Que.....Leicester.
Maynard, J. T., Chilliwack, B.C.....Dorset.
Miller, Jos., Ephraim, Greenbush.....Oxford.
Milne, R. & Son, Green River.....Shropshire.
Milot, Hercule, Yamachichi, Que.....Oxford.
Milot, Honore, Yamachichi, Que.....Cotswold.
Monkman, W. D., Bond Head.....Shropshire.
Morin, P. N., St. Norbert, Que.....Leicester.
Morrin, D. T., Lachute, Que.....Leicester.
McAllister, W. E., Durham.....Leicester.
McCrae, D., Guelph.....Southdown & Cotswold.
McCue, Jas. & Son, Melancthon.....Leicester.
McDonald, Roderick, Manitowaning.....Cotswold.
McEwen, Lt.-Col. R., Byron.....Southdown.
McKillican, W. E., Vankleek Hill.....Leicester.
McLaren, P. S., McGarry.....Oxford.
McLean, A. B., Foam Lake, Sask.....Oxfords.
McLean, Jno. G., Beachburg.....Oxiords.
McNally, Hugh, Guelph.....———
McPhee, D. A., Vankleek Hill.....Oxfords.
McRobie, Fred., Iroquois.....Leicester.
Napoleon, Levert, Cote St. Vincent, Que.....Leicester.
Napoleon, Rivost, St. Lignois, Que.....———
Newton Bros., Clifford.....———
Nichol, Robt., Brussels.....Leicester.
Nicholls, Jas. H., Dundalk.....Leicester.
Noisux, Frederic, St. Cesair, Co. Rouville, Que.Leicester.
Ouimet, Clovis, St. Francois de Sales, Que.Lincolns.
Page, T. W., Bolton Glen, Que.....Leicester.
Pare, Augustin, Rivier aux Chiens, Que.....Leicester.
Park, E. F., Burford.....Cotswolds.
Parkinson, Ernest, Eramosa.....Lincolns.
Parkinson, L., Eramosa.....Lincolns.
Parkinson, G. & W., Eramosa.....Leicester.
Parnell, Isaac, Spring Road, Que.....Leicester.
Partridge, A. W., Crown Hill.....Leicester.
Patrick, J. H., Ilderton.....Lincolns.
Pelletier, L. C., Montreal, Que.....Oxford Downs.
Peloquin, David, St. Ows, Que.....Leicester.
Pepin, Ludger, St. Norbert, Co. Arthabaska, Que.....———
Perrault, T., St. Esprit, Que.....Cotswolds.
Perrier, Octave, Laprairie, Que.....Cotswolds.
Picard, Telephare, St. Theodore d'Acton, Que.....Leicester.
Pichette, Donat, St. Esprit, Que.....Cotswolds.

MEMBERS OF DOMINION SWINE BREEDERS' ASSOCIATION, 1908 AND 1909.—*Continued.*

Name and Address.	Breed.
Pillus, Jno. H., Knowlton, Que.	Leicester.
Potter, A. B., Montgomery, Sask.	Leicester.
Provencher, Edouard, St. Norbert, Que.	Leicester.
Purcell, Jno., Huntington, Que.	Leicester.
Quain, John, Rosedale, Que.	Leicester,
Quest, J. & W., Hallerton, Que.	Cotswolds.
Rankin, Geo. & Son, Hamiota, Man.	Leicester.
Rawlings, John, Forest.	———
Rivet, Avila, Ste. Esprit, Co. Montcalm, Que.	Leicester.
Roberge, J. P., St. Pierre, Ile of Orleans, Que.	Leicester.
Robinson, Chas., Odell Town, Que.	Cotswold.
Robson, T. A., Frontier, Que.	Leicester.
Ross, Jno., Kinnear's Mills, Que.	Leicester.
Roy, James, Bornholm, Ont.	———
Rudell, A., Hespeler.	Shropshire.
Rutherford, R. N., Glen Morris.	———
Rye, Jos. & Sons, Duagh, Alta.	Suffolk.
School of Agriculture, La Trappe, Que.	———.
Senecal, L. C., St. Marc de Vercheres, Que.	Leicester.
Shaw, Robert, Brantford.	Leicester.
Shaw, D. M. & Son, Basinstoke.	Leicester,
Shields, A. & A., Caisterville.	Sbropshire.
Silver, H. G., Danville, Que.	Leicester.
Skinner, F. T., Indian Head, Sask.	Shropshire.
Smith, C. E., Scotland.	Leicester.
Smith, A. W., Maple Lodge.	Leicester.
Smith, W. M., Scotland.	Dorsets.
Smith, Wm., Columbus.	Cotswold.
Snaden, Miss Annie E., Danville, Que.	———.
Snell, Jas., Clinton.	Leicester.
Snell, J. V., Snellgrove.	———.
Sockett, John, Rockwood.	Cotswold.
Stevens, J. M., Bedford, Que.	Leicester.
Stevenson, A., Atwood.	Oxford.
Stewart, Alex., Living Springs.	Oxford.
Stinson, R. H., Horning's Mills.	Cotswold.
Sutton, Mark, Ospringe.	Leicester.
Sylvester & Frere, St. Theodore d'Acton, Que.	Cotswold.
Sylvester Bros., Clairvoux, Que.	Oxford Downs.
Talbot, Evareste, St. Norbert, Co. Arthabaska, Que.	———
Telfer, Geo., Paris.	South Downs.
Telfer, Bros., Paris.	South Downs.
Thompson A., Allen's Corners, Que.	Leicester.
Thompson, Douglas, Woodstock.	———.
Thouin, Louis, Repentigny, Que.	———.
Tolton, Jas. & Son, Walkerton.	Oxfords.
Trabon, Edmond, Yamachiche, Que.	Oxford Downs.
Tremblay, Achille A., Les Ebouliment, Que.	Leicester.
Tracey, Henry, Midhurst.	Cotswold.
Trottier, Jos., St. Nobert, Que.	———.
Turenne, Dephis, St. Paul l' Ermite, Que.	Leicester.
Turenne, Philappe, St. Paul l' Ermite, Que.	Leicester.
Turnbull, Oliver, Walton.	Leicester.
Underhill, Jos, Claremont.	Shropshires & Cotswold.
Vance, Robert, Ida.	Cotswold.
Vilandre, Lewis, St. Victorie, Que.	Leicester.
Wallace, Wm. A., Glen Morris.	Shropshires.
Wallace, Thos. J., Kinnear's Mills.	Leicester.
Wallace, Jno. N., Renfrew.	Shropshires.
Wells, A. C., Sardis, B.C.	Lincolns.
Westington & Leon, Plainville.	Leicester.
Whitelaw, A. & W., Guelph.	Leicester.
Wightman, Robt., Clifford.	Leicester.
Williams, H. E., Knowlton, Que.	Shropshires.
Wood, C. & E., Freeman.	Leicester.
Wood, Wm., Palermo.	Leicester.
Wood, E. R., Appleby.	Leicester.

MEMBERS OF DOMINION SWINE BREEDERS' ASSOCIATION, 1908 AND 1909.

Abra, Moses, Blair.	Yorkshire.
Agricultural College Farm, Truro, N.S.	Yorkshire.
Aidous, R. B., Lorlie, Sask.	Yorkshire.
Allison, David, Roland, Man.	Berkshire.
Armstrong, David, Quill Lake, Sask.	Berkshire.
Armstrong, Henry, Forth, Man.	Yorkshire.
Arpin, Eugene, St. Ours (Co. Richelieu) Que.	Yorkshire.
Ash, Wm. R., North Ridge.	Berkshire.
Bailey, J. W., Wetaskawin, Alta.	Berkshire.
Baker & Vereker, Fort Saskatchewan, Alta.	Yorkshire.
Ballantyne, P. M., Lacombe, Aita.	———.
Balsdon, W. A., Whitby.	Berkshire.

Banting, T. E. M., Wawanesa, Man.....Tamworth.
Barker Bros., Okotoks, Alta.....Yorkshire.
Barker, W. S., Deloraine, Man.....Yorkshire.
Barr, David, Jr., Renfrew.....Yorkshire.
Batchellor, C. A., Bedford, Que .....Tamworth.
Beaman, Herman, Napinka, Man.....Yorkshire.
Beaudet, Ernest, Lothiniere, Que.....Yorkshire.
Beauregar, O. H., St. Damase, Que.....Chester White.
Beckstead, G. A., Morrisburg.....Berkshire.
Bedlow, John, Brockville.....Berkshire.
Beingessner, F. H., Mildmay.....Berkshire.
Bell, J. J., Islay, Alta.....Yorkshire.
Belton, Thos. H., Hagersville .....Yorkshire and Berkshire.
Bennett, Geo., Charing Cross.....Chester White.
Bennett, G. Findley, Canterbury, Que.....Yorkshire.
Benson, Stephen, Neepawa, Man.....Yorkshire.
Bergevin, Eustache, St. Martine, Que.....———.
Betzner, Geo. T., Copetown.....Yorkshire.
Birch, R., Anderson.....Yorkshire.
Bissett, James, Roseland, Man.....Berkshire.
Black, D. Allan, Kingston.....Yorkshire.
Blackburn, Wm., Murray Bay, Que.....Yorkshire.
Blair, Robert, St. Andrews, East Vercheres, Que.....Yorkshire.
Blanchet, Etienn, St. Marc, Que.....Yorkshire.
Blight, Emerson, Millwood, Man.....Berkshire.
Blight, Emerson, Beavelan, Sask.....Berkshire.
Bocrma, G. North Battleford, Sask.....Yorkshire.
Boden, James, Danville, Que.....Yorkshire.
Bonnycastle, Chas. E., Campbellford.....Berkshire.
Boutet, Jos., Victoriaville, Que.....Chester White.
Bowman, Dr. A. E., Amherstburg.....Berkshire.
Bowman, T. E., High River, Alta.....Berkshire.
Boyle, J. W., Woodstock.....Yorkshire.
Boynton, Wm., Dollar, Ont .....———.
Brandow, J. L., Walsingham Centre.....Yorkshire.
Bray, James, Portage la Prairie, Man.....Berkshire.
Bray, John, Logoch, Man.....Yorkshire.
Bredt, P. M., Regina, Sask.....Yorkshire.
Brethour, J. E. Burford.....Yorkshire.
Brien, E. & Son, Ridgetown.....Berkshire.
Bright, John, Myrtle Station .....Berkshire.
Brodie, Peter, Little York, P.E.I.....Berkshire.
Brooks, J. D., Plum Coulee, Man.....Poland China.
Brown, F. W., Portage la Prairie, Man.....Berkshire.
Brown, John C., Stanford.....Tamworth.
Browne Bros., Ellisboro, Sask.....Berkshire.
Brownlee, W. J., Bunyan.....Yorkshire.
Brownridge, C. M., Arcola, Sask.....Yorkshire.
Brownridge, Wm., Ashgrove.....Yorkshire and Berkshire.
Bryant, W. A., Cairngorme.....Berkshire.
Bull & Son, B. H., Brampton.....Berkshire.
Bulstrade, C. G., South Qu'Appelle, Sask..Berkshire.
Burkholder, Noah, Cherrywood.....Berkshire.
Caldwell, F. E., Manotick, Ont.....Chester White.
Cameron, D. P., Finch, Ont.....Yorkshire.
Cameron, J. L., Wilbert, Sask.....Berkshire.
Campbell, Geo., Killarney, Man.....Tamworth.
Campbell, Jno., Vankleek Hill, Ont.....Yorkshire.
Campbell, Mac., Harwich, Ont.....Duroc Jersey.
Capes, Henry, Kertch, Ont.....Chester White.
Caron, Thodie, St. Aubert, Que.....Yorkshire.
Carroll, Thos., Nutana, Sask.....Berkshire.
Carswell, E., Penhold, Alta.....Yorkshire.
Caswell, A. W., Neepawa, Man.....Tamworth.
Caswell, R. W., Saskatoon, Sask.....Yorkshire.
Caven, Geo., Box 1052, Toronto.....Berkshire.
Central Experimental Farm, Ottawa, Ont...Yorkshire.
Cerswell, J. A., Bond Head, Ont.....Yorkshire.
Chapman, F. M., Pickering, Ont.....Yorkshire.
Choate, E. T., Brampton, Ont.....Berkshire.
Clark, F. W., Christies, N.B. .....Chester White.
Clark, J. W., Cainsville, Ont.....Yorkshire.
Clark, H. G., Georgetown, Ont.....———.
Clark, Robert, Ottawa, 41 Cooper St.....Chester White.
Clendenning Bros., Harding, Man .....Yorkshire.
Coates, Wm., Malton, Ont.....———.
Cogswell, Walter S., Centreville, N.B. ....Chester White.
Cole, T. J., Bowmanville, Ont.....Yorkshire.
College de Saint Laurent, St. Laurent, Que..Yorkshire.
College de l'Assomption, L'Assomption, Que.....Yorkshire.
Collins, P. O., Bowesville, Ont.....Yorkshire.
Colvin, James A., Sedgwick, Alberta .....———.
Colwell, A. A., Newcastle, Ont.....Tamworth.
Cook, W. M., Little York, P.E.I. .....———.
Corbett, G. H., Lakeville, Carleton, N.B..Chester White.
Corbin, Oscar, St. Esprit, Que.....———.
Corning, H. W., Chegoggin, N.S.....Chester White.
Court, Leonard, Donaldson, P.E.I.....Chester White.

MEMBERS OF DOMINION SWINE BREEDERS' ASSOCIATION, 1908 AND 1909. —*Continued.*

Name and Address.	Breed.
Cowan, J. S., Donegal, Ont.	Berkshire.
Cowieson, J. B., Queensville, Ont.	Berkshire.
Cox, T. A., Brantford, Ont.	Berkshire & Yorkshire.
Crockett, Geo., York, P.E.I.	Berkshire.
Crowe, John C., Gilbert Plains, Man.	Chester White.
Crowell, W. N., Napinka, Man.	Berkshire.
Crozier, C. A., Northcote, Ont.	Berkshire.
Currie, C., Morriston, Ont.	Tamworth & Yorkshire.
Curry, Hugh & Son, Ingleton, Alberta	Berkshire.
Curry, Wm., South Qu'Appelle, Sask.	Berkshire.
Dalton, John, Victoria Harbor, Ont	Chester White & Yorkshire.
Davidson, Thos., Spring Valley, Ont.	Tamworth.
Davis, H. J., Woodstock, Ont.	Yorkshire.
Dawes & Company, Lachine, Que.	Berkshire.
DeCourcey, D., Bornholm, Ont.	Yorkshire & Chester White.
DeLisle, G., Lloydminster, Sask	Yorkshire.
Demstedt, Abe., Carberry, Man.	Yorkshire.
Denis, Arsene, St. Norbert, (Berthier), Que.	Yorkshire.
Denison, W. S., Denison's Mills, Que.	Chester White.
Department of Agriculture, Edmonton, Alta.	Yorkshire.
Derbyshire, C. J., Wheatley, Ont.	Duroc Jersey.
Diehl, Wm., Marcelin, Sask	Yorkshire.
Disney, W. F., Greenwood, Ont.	Yorkshire.
Dolson, H. A., Alloa, Ont.	Berkshire.
Dolson, Samuel, Norval Station, Ont.	Berkshire.
Dolson, W. J. McL., Norval Station, Ont.	———.
Donaldson, James, Dewittville, Que.	Chester White.
Douglas, D. & Son, Mitchell, Ont.	Tamworth.
Douglas, Robert, M., Tantallon, Sask.	Berkshire.
Duck, R. F. & Son, Port Credit, Ont.	Yorkshire.
Dufort, Louis, St. Marc, Que.	Berkshire & Yorkshire.
Dulude, Jos., Ste. Martine, Que.	Yorkshire.
Durham, John V., Vanessa, Ont.	Berkshire.
Durham, W. H., Box 1,052, Toronto	Berkshire.
Duthie, James, Hartney, Man.	Berkshire.
Edwards, W. M. V., Souris, Man.	Berkshire.
Ellinton, John & Sons, Hornby, Ont.	Berkshire.
Elliott, E. N., Wawanessa, Man.	Berkshire.
Elliott, W. D., Comber, Ont.	Berkshire.
English, W. H., Harding, Man.	Yorkshire & Berkshire.
Enke, Max, Galiano Island, B.C.	Berkshire.
Erbe, Wm. A., Sussex, N.B.	Chester White.
Esty, E. J., Eastman, Que.	Yorkshire.
Evans, Wm. H., North Battleford, Sask.	Berkshire.
Ewens, J. M., Bethany, Man.	Berkshire.
Faith, R. B., Ottawa, Ont.	Yorkshire.
Fallis, John A., Redvers, Sask.	Yorkshire.
Farough, Nicholas, Maidstone, Ont.	Duroc Jersey.
Featherston, Jos. & Son, Streetsville, Ont.	Yorkshire.
Ferguson, G. L., Souris, Man.	Berkshire.
Fetterley & Son, Martin, Russell, Ont.	———.
Field, W. H. & J. O., Vanessa, Ont.	Berkshire.
Findlayson, Kenneth, North Battleford, Sask.	Yorkshire.
Fisher, A. O., Calgary, Alta., Box 814.	———.
Fisher, The Hon. Sidney, Knowlton, Que.	Tamworth.
Flatt, D. C. & Son, Millgrove, Ont.	Yorkshire.
Fletcher, G. D., Binkham, Ont.	Berkshire & Yorkshire.
Fleury, Alfred, Auge Garden, Que.	Yorkshire.
Flock, S., Red Willow, Alta.	Yorkshire.
Foley, J. A., Ste. Thuribe, Que	Yorkshire.
Forget, R., Baie St., Paul, Que.	Yorkshire.
Forth, D. J., Glen Buell, Ont.	Yorkshire.
Forrest, H. C., Wardsville, Ont	Berkshire & Yorkshire.
Fortier, Paul, St. Pierre Baptiste, Que.	Yorkshire.
Fortin, David, St. Alphonse de Granby, Q.	———.
Foster, A. H., Twin Elm, Ont.	Yorkshire.
Frazer, J. A., Portage la Prairie, Man.	Berkshire.
Gaffield, N. S., Brockville, Ont.	Yorkshire.
Garbutt, R. J., Belleville, Ont.	Yorkshire.
Garceau, Gedion, Point du lac, Que.	Yorkshire.
Garden, Norman, Ellisboro, Sask.	Berkshire.
Gaucher, Alex., St. Damase, Que.	Chester White.
George, E. D., Putnam, Ont.	Chester White.
George, H. E., Crampton, Ont.	Chester White.
German, Herbert, St. George, Ont.	Tamworth.
Gerry, Idola, Milton East, Que.	Yorkshire.
Gibson, Wm. J., Marshfield, P.E.I.	Tamworth.
Gies, C. R., Heidelburg, Ont.	Poland China.
Glen Bros., Didsbury, Alberta	Yorkshire.
Glenhodson Company, Myrtle, Ont	Yorkshire.
Goodliffe, S. J., Sussex, N.B	Yorkshire.
Gouin, P. A., Three Rivers, Que.	Tamworth.
Gourley, Jos., Carp, Ont.	Berkshire.

Graham, A., Pomeroy, Man.....Yorkshire.
Graham, G. H., Udora, Ont.....Yorkshire.
Grantham, John J., Gladstone, Man.....Berkshire.
Gregg, W. H., Salford, Ont.....Chester White.
Greenshields, J. N., Danville, Que.....Yorkshire.
Greenway, Thos., Crystal City, Man.....Yorkshire.
Griffiths, D. J., Stanley, N.B.....Chester White.
Grimby, Geo. B., Cartwright, Man.....Chester White.
Grove, J. L., Ringwood, Ont.....Yorkshire.
Gummer, Geo. A.. Colbourne, Ont.....Chester White.
Gunn, D. & Son, Beaverton, Ont.....Yorkshire.
Hadwen, G. H., Duncan's, B.C.....Berkshire.
Hallman, A.C., Breslau, Ont.....Tamworth.
Hamilton, Jas., Shakespeare, Ont.....Berkshire.
Harber, W. W., Camrose, Alta.....Yorkshire.
Harding, R. H., Thorndale, Ont.....Chester White.
Hardy, Wellington, Roland, Man.....Yorkshire.
Harriston, Richard, Coppiac Hill, Alta.....Berkshire.
Hastings, Bros., Crosshill, Ont.....———.
Hauman, Jos., Fisherville, Ont.....Berkshire.
Hauser, Ignatius, Weisenburg, Ont.....Yorkshire.
Havens, Thos. N.& Sons, Aldboro, Ont.....Yorkshire.
Haw, John, Virden, Man.....Berkshire.
Hawkins, R. C., Swan Lake, Man.....Berkshire.
Heslop, Arthur, Appleby, Ont.....Yorkshire.
Hibbert, F., Cupar, Sask.....Berkshire.
Higgins, Geo., Brandon, Man.....Yorkshire.
Hillier Bros., Albuna, Ont.....Chester White.
Hill, John, Camboro, Ont.....Yorkshire.
Hitchcock, Jos. H., Griswold, Man.....Yorkshire.
Hogle, S. G., Violet, Ont.....Yorkshire.
Holt, Chas. L., Stettler, Alta.....Berkshire.
Honey, R., Brickley, Ont.....Yorkshire.
Hood, G. B., Guelph, Ont.....Yorkshire.
Hoover, Henry H., Horse Lake, Sask.....———.
Hope, G. A., Wadena, Sask.....Berkshire.
Horn, Peter, Regina, Sask.....Yorkshire.
Hoskin, Bertram, The Gully, Ont.....Tamworth.
Hostetler, & Sons, New Hamburg, Ont.....Yorkshire.
Houston, R., Dixie, Ont.....———.
Howes, M. J. & Son, Millett, Alta.....Berkshire.
Howlett, Ira L., Keldon, Ont.....Yorkshire.
Hume, & Company, Alex., Menie, Ont.....Yorkshire.
Hutchison, Lew, Duhamel, Alta.....Berkshire.
Hyslop, Robert, Brantford, Ont.....Berkshire.

Ingles, W. D., Foster, Que.....Yorkshire.
Ings, S. R., Pownal, P.E.I.....Berkshire.
Innes, Donald, Tobique River. N.B.....Yorkshire.
Irving, J. D., Buctouche, N.B.....Yorkshire & Berkshire.
Irwin, Gilbert, Cameron, Ont.....Yorkshire.
Isaac, D. N., Souris, Man.....Berkshire.
Jackman, W. J, East Clover Bar, Alta.....Berkshire.
Jackson, John R., Yatton, Ont.....Berkshire.
James, Clarence M., Rosser, Man.....Yorkshire.
James, Walter & Son, Rosser, Man.....Yorkshire.
Jasper, A. F. Harding, Man.....Berksnire.
Jasper, Thos., Harding, Man.....Berkshire.
Jeffs & Son, E., Bond Head, Ont.....Berkshire.
Jewett, John R., Macinquac, N.B.....Chester White.
Johnstou, Bros., Underwood, Ont.....Yorkshire.
Johnston, A. W..Prongua, Sask.....Berkshire.
Johnston, Wm., Delta, Ont.....Berkshire.
Jones, D. Jr., Caledonia, Ont.....Yorkshire.
Jones, D., Caledonia, Ont.....Yorkshire.
Jones, James, Calgary, Alta.....Berkshire.
Jones, Wm., Zenda, Ont.....Yorkshire.
Kean, J. & Son, Orillia, Ont.....Yorkshire.
Keith & Son, Wm., Listowel, Ont.....Tamworth.
Kelly, John & Son, Shakespeare, Ont.....Berkshire.
Kelly, J. W., Hagersville, Ont.....Yorkshire.
Kelly, R. J., Hagersville, Ont.....Tamworth.
Ketchen, D. W., Belleville, Ont.....———.
Ketcheson, Mrs. J. H., Chisholm, Ont.....Tamworths.
Kettlewell, Gervasse, Davidson, Sask.....Yorkshire.
Killough, J. H., Pense, Sask.....Yorkshire & Tamworth.
King, Oliver, Wawanessa, Man.....Yorkshire.
Kinston, R. J., Oxford Mills, Ont.....Yorkshire.
Kirbyson, J. R., Fairfax, Man.....Yorkshire.
Knight, Geo. E., Sardis, B.C.....Chester White.
Knight, Stephen, Elginburg, Ont.....Berkshire.
Koelln, H., Glen Allen, Ont.....Yorkshire & Berkshire.
Lachapelle, Louis, St. Pie de Bagot, Que.....Chester White.
Lalanne, Pierre, Mount Johnston, Que.....Chester White.
Lalime, L., St. Hyacinthe, Que.....———.
Langelier, Gus. A., Cap Rouge, Que.....Yorkshire.
Larkin, John D., Queenstown, Ont.....Berkshire.
Lavallie, Paul, Berthier en Haut, Que.....Yorkshire.
Lavallie, Louis, St. Guillaume, Que.....Yorkshire.
Lavallie, Pierre, St. Norbert, Que.....Yorkshire.
Lawrence, J., Oxford Centre, Ont.....Berkshire.

MEMBERS OF DOMINION SWINE BREEDERS' ASSOCIATION, 1908 AND 1909.—*Continued.*

Name and Address.	Breed.
Lea, Richard, Bridge Creek, Man	Berkshire.
Leclere, Jos., St. Charles de Bellechase, Que.	Yorkshire.
Lee, J. W. & Son, Simcoe, Ont.	Yorkshire.
Lee, Jos. & Son, Dunham, Que.	Chester White.
Lefaivre, P. M., Vankleek Hill, Ont.	Berkshire.
Legris, N., St. Leon, Co. Maskinonge, Que.	Yorkshire.
Lemaire, Jos., St. Majorie, Que.	Yorkshire.
Lemon, S., Kettleby, Ont.	Berkshire.
Leonard, Jas. B., Appleby, Ont.	Yorkshire.
Letournean, Eudore, St. Famille, Ile d'Orleans, Que.	Yorkshire.
Linton, Wm. Jr., Aurora, Ont.	Yorkshire.
Little, T. Jr., Kirkwall, Ont.	Yorkshire & Berkshire.
Lloyd, Jas. H., St. Lin, Que.	Yorkshire.
Logan Bros., Amherst Point, N.S.	Berkshire.
Loiselle, Ovide, St. Marc, Que.	———.
Loisette, Oriole, St. Marc, Que.	———.
Lowden, M. L., Binbrook, Ont.	Berkshire.
Loynachan, A. D., Glen Brook, Ont.	Yorkshire.
Lucas, Wm., Appleby, Ont.	Chester White.
Lyall, Chas. F., Strome, Alta.	Berkshire.
Lyons, S. J., Norval, Ont.	Berkshire.
Lyon, Wm., Moffat, Sask.	Berkshire.
Mabon, W., Neelin, Man.	Yorkshire.
Macdonald College, Macdonald College, Que.	Berkshire & Yorkshire.
Main Bros., Glenrose, Sask.	Berkshire.
Malott, Gavan, Leamington, Ont.	Poland China.
Manitoba Agr. Coll., Winnipeg, Man.	Berkshire.
Manseau, Francis, Nicolet, Que.	Yorkshire.
Mansfield, Geo., Manotick, Ont.	Chester White.
Marcotte, Armand, St. Basil Station, Que.	Yorkshire.
Mark, G. H., Little Britain, Ont.	Berkshire.
Markle, D. G., Lamont, Alta.	Berkshire.
Marples, J. C., Delean, Man	———.
Martin, E. E., Canning, Ont.	Berkshire.
Martin, R. G., Marysville	Yorkshire.
Martin, W. A., Gilead, Ont.	Berkshire & Yorkshire.
Mason, H. A., Scarboro, Ont.	Berkshire.
Mathiew, Nap., Beauceville, Que.	Yorkshire.
Matthewson, John, Virden, Man.	Berkshire.
Mayloney, F. A., Chapleau, Que.	Yorkshire.
Maynard, J. T., Chilliwack, B.C.	Duroc Jersey.
Melborn, Frank, Virden, Man.	Berkshire.
Menzies, J. A., Lloydminster, Sask.	Yorkshire.
Menzies, W. D., Rising Sun, Alta.	Yorkshire.
Mercer, Thos., Markdale, Ont.	Yorkshire.
Messenger, R. J., Bridgetown, N S.	———.
Metcalf, H. W., Lacombe, Alta.	———.
Midd, Stephen, Auburn, Ont.	Berkshire.
Miller, Marshall, Brome Centre, Que.	Chester White.
Milot, Hercule, Yamachiche, Que.	———.
Miltimore,, E. S., Knowlton, Que.	Tamworth.
Mitton, W. J., Thamesville, Ont.	Yorkshire.
Molleur, Regis, Pike River, Que.	Berkshire.
Mooney, J. A., Valley River, Man.	Yorkshire.
Moonie, R. D. Abernethy, Sask.	Berkshire.
Moore, H. B., Innisfail, Alta.	———.
Moore, W. H., Scotch Lake, N.B.	Yorkshire.
Morgan, E. L., Milliken, Ont.	Berkshire.
Morkin, J. P., St. Albert, Alta.	Berkshire.
Morrison, A. & J., Homewood, Man	Berkshire.
Morrow, R. O., Hilton, Ont.	Tamworth.
Motheral, Jas., Drumbo, Ont.	Berkshire.
Motson, W. H. & Son, Rapid City, Man.	Yorkshire.
Muma, G. B., Ayr, Ont.	Yorkshire.
Murdock, Wm., Palmerston, Ont.	Yorkshire.
MacLean, W. F., Donlands, Ont.	Yorkshire.
MacPhail, John M., Virden, Man.	Berkshire.
McBeath, Alex. A., Marshfield, P.E.I.	Yorkshire.
McBeath, Geo. Prince Albert, Sask.	Berkshire.
McBeth, John, Dromore, Ont.	Berkshire.
McClure, Geo. A., Elder's Mills	Berkshire.
McDermit, R., Pierson, Man.	Berkshire.
McDiarmid, H. S. Fingal	Yorkshire.
McDonald, A. D., Napinka, Man.	Berkshire.
McDonald, Peter, Virden, Man.	Berkshire.
McDonald, W. S., Gananoque	———.
McDonnell, D. C., Grenfell, Sask.	Berkshire.
McEwen, P. J., Kertch.	Berkshire.
McGhee, Wm., Jr., Beachville	Berkshire.
McGill, J. A., Neepawa, Man.	Berkshire.
McGrath, P., Oak Bluff, Man.	Poland China.
McIntosh, Mrs. C. W., Lacombe, Alta.	Yorkshire.
McKean, Geo., St. John, N.B.	Yorkshire.

McLaughlin, O. A., Knowlton, Que. ..... ————.
McLeod, John, Milton West. ..... Berkshire.
McNish, W. H. & A. H., Lyn. ..... Tamworth & Yorkshire.
McNally, W. J., Walkerton ..... Yorkshire.
McPherson, John, Perth. ..... Yorkshire.
McPherson, Richard, Brandon, Man. ..... Berkshire.
McPherson, W. T., Wadena, Sask. ..... Yorkshire.
Neven, Jos., St. Didace, Que. ..... Yorkshire.
Nicoll, J. A., Rossendale, Man ..... Yorkshire.
Noble, Thos., Daysland, Alta. ..... Tamworth.
Oak Park Stock Farm Company, Brantford. Berkshire.
O'Neil, A,, Birr. ..... ————.
Ontario Agricultural College, Guelph ..... Yorkshire.
Orchard, Frank, Graysville, Man ..... Tamworth.
Oswald, W. A., Petit Brule, Que. ..... Berkshire.
Ottawa Valley Journal, Ottawa ..... Berkshire & Yorkshire.
Ouellette, D. & A., Amherstburg. ..... Berkshire.
Ouimet, Clovis, St. Francis de Salles, Que. . Yorkshire.
Owens, Hon. Wm., Monte Bello, Que. ..... Yorkshire.
Papin, Phillipe, Vancluse, Que. ..... ————.
Paquin, S., Deschambault, Que. ..... Yorkshire.
Pare, Joseph, St. Hubert, Que. ..... Yorkshire.
Parent, J. E., Charlesbourg, Que. ..... Yorkshire.
Parker, J. H. M., Lennoxville, Que. ..... Chester White.
Parker & Son, Thos., London. ..... ————.
Patton, David, Paris Station. ..... Tamworth.
Pearson, S. J. & Son, Meadowvale ..... Berkshire.
Pelletier, L. C., La Prairie, Que. ..... Chester White.
Perreault, Toussanit, St. Esprit, Que ..... Chester White.
Perry, P. W., Deloraine, Man. ..... Yorkshire.
Peterson, August, Weyburn, Sask ..... Berkshire.
Phaneuf, Antonie, St. Antoine, (Vercheres) Que. ..... Chester White.
Phenix, Berthius, Miquelon, Que. ..... Chester White.
Phillips, Thos., Essex. ..... Poland China.
Phillips, W. H., Battleford, Sask. ..... Berkshire.
Pichet, Douat, St. Esprit, Que. ..... Berkshire.
Pierce, H. C., Wadena, Sask. ..... Yorkshire.
Pinter, Chas. & Sons, Cowansville, Que. ..... Tamworth.
Plaunt, H., Northcote. ..... Berkshire.
Poole, W. R. Freeland ..... Yorkshire.
Pope, J. C., Regina, Sask. ..... Yorkshire.
Porter, Alex., Alexander, Man. ..... Berkshire.
Potter, A. B., Montgomery, Sask. ..... Yorkshire.
Pritchard, R. J., Roland, Man. ..... Berkshire.
Prodhomme, R., Osler, Sask. ..... ————.
Provencher, Alfred, Pidgeon, Que. ..... Yorkshire.
Provencher, E. J., St. Norbert, Que. ..... Chester White.
Pryor, James A., Leinburg, Sask. ..... Berkshire.
Purdy, D. A., Lumsden, Sask. ..... Yorkshire.
Quebec, H. M., Clover Bar, Alta. ..... Tamworth.
Quintin, Ephrem, Mount Johnston, Que. ..... Yorkshire.
Redditt, Geo., Richmond Hill ..... Berkshire.
Reed, Isaac, Ardtrea ..... Berkshire.
Reid, James, Glen William ..... Yorkshire.
Reid, R. & Co., Ottawa ..... Tamworth & Berkshire.
Rich, W. P., Salmon Arm, B.C. ..... Berkshire.
Riopel, Aime, St. Esprit, (Montcalm) Que. . Berkshire.
Roberge, J. P., St. Pierre, Que. ..... ————
Roberts, Wm., Oak Bank, Man. ..... Berkshire.
Robinson, B. W., Arkola, Sask ..... Yorkshire.
Rondeau, Norbert, Weedon Centre, Que. ..... Yorkshire.
Root, Geo. F., Red Deer, Alta. ..... Berkshire.
Roper Bros., Charlottetown, P.E.I ..... Tamworth.
Rouleau, A , St. Gregorie, Que. ..... Yorkshire.
Roulston, W. D., Garnet. ..... Tamworth.
Rudd, C. C., Guelph ..... Berkshire.
Rye, Jos., Duagh, Alta. ..... Tamworth.
Sarvie, Geo., Plessisville, Que. ..... Yorkshire.
School of Agriculture, La Trappe, Que. ..... ————.
School of Agriculture, St. Anne de la Pocatiere, Que. ..... Yorkshire.
Scott, John, Atha. ..... Berkshire.
Scott, Walt. K., Sheho, Sask. ..... Yorkshire.
Seaman, L. C., Strathcona, Alta. ..... Tamworth.
Semple, J. R., Brule, N. S. ..... Berkshire & Yorkshire.
Shannon Bros., Cloverdale, B.C. ..... Berkshire.
Shea, Thos. M., Fergus, Ont ..... Berkshire.
Shepard, Frank, Weyburn, Sask. ..... Berkshire.
Shepherdson, W. J., Walter's Falls. ..... Berkshire & Tamworth.
Shibley, James B., Harrowsmith ..... Berkshire.
Shields, W. A., Milton. ..... Berkshire.
Sinclair, F. G., Grahamsville ..... Berkshire.
Sinclair, Peter J., Rockston ..... Yorkshire.
Sisters, St. Joseph, St. Hyacinthe, Que. ..... Chester Whites.
Smith Bros., South Woodslee. ..... Berkshire.
Smith, D., Gladstone, Man. ..... Yorkshire.
Smith. G. M., Hayesville. ..... Yorkshire.
Smith, John W., Comber. ..... Berkshire.
Smith, John & Son. Duntroon ..... Yorkshire.

MEMBERS OF DOMINION SWINE BREEDERS' ASSOCIATION, 1908 AND 1909.—*Continued.*

Name and Address.	Breed.
Smith, W. M., Scotland	Poland China.
Snider, Irwin A., Floradale	———.
Snider, T. & S. E., Dawn Mills	Duroc Jersey.
Snowden, Samuel, Bowmanville	Berkshire.
Spafford, Dufferin, Weyburn, Sask	———.
Sparrow, J. B., St. Agathe, Que	— —.
Standish, John E., Rougemont, Que	Chester White.
Standish, Matthew, Rougemont, Que	Chester White.
Steinmann, Jacon, New Hamburg	Duroc Jersey.
Stevens, John M., Bedford, Que	Tamworth & Chester White.
Stevens, W. F., Clover Bar, Alta	Berkshire.
Stewart, David, Carman, Man	Berkshire.
Stewart, J. C., Dalmeny	— —.
Stewart, James J., Gladstone, Man	Yorkshire.
Stewart, Robert, Winslow, P.E.I	Yorkshire.
Stewart, Shirley, Uphill	Yorkshire.
Stittson, John, Marshfield, P.E.I	Berkshire.
Stoneycroft Stock Farm, St. Anne de Bellevue, Que	Yorkshire.
Story, F. W., Toronto	— —.
Stover, Jacob, Springford	Chester White.
Strachan, John, Crandall, Man	Yorkshire.
Straub, Adam, Elmira	Yorkshire.
Sylvester, Bros., Clairvoux, Que	Chester White.
Sylvester, L. P., St. Theodore d'Acton, Que.	Yorkshire.
Taylor, Robert, Goodwood	Yorkshire.
Teasdale, Frank, Concord	Berkshire.
Teasdale, Thos., Concord	Berkshire.
Thompson Bros., Swarthmore, Sask.	Yorkshire.
Thompson, Douglas, Woodstock	Berkshire.
Thompson, James, Sardis, B.C	———.
Thomson, Adam, Shakespeare	Berkshire.
Thomson, J. C., Mildmay	Yorkshire.
Thouin, Louis, Repentigny, Que	Yorkshire.
Thuell, Wm. C., Brussels	Berkshire.
Thourston, R. E., Bobcaygeon	Yorkshire.
Tibbets, John W., Knowlton, Que	Yorkshire.
Todd, J. W., Corinth	Berkshire & Tamworth.
Tourigmy, Paul, Victoriaville, Que	Berkshire.
Tran, W. H., Cedar Grove	Yorkshire.
Trann, W. L., Crystal City, Man	Tamworth & Poland China.
Trappistes, Les Reverend Peres, Mistassini, Que	Yorkshire.
Trappistes, R. R. P. P., St. Norbert, Man	———.
Tregillus, W. J., Calgary, Alta	Yorkshire.
Trudel, Theophile, St. Prosper, Que.	Yorkshire.
Turnbull, T., Manitou, Man	Yorkshire.
Tyles, Herbert, Rosser, Man	Yorkshire.
Vance, A. D., Prescott	Yorkshire.
Vance, Robert, Ida	Berkshire.
Vanderlip, H. M., Cainsville	Berkshire.
Van Horn, Sir Wm., Montreal, Que.	Yorkshire.
Vokes, Chas., Quill Lake, Sask	Yorkshire.
Vollbrecht, Wm., Creelman, Sask	Yorkshire.
Walker, M. E., Glencoe	Chester White.
Walker, James W., Nutana, Sask	Poland China.
Wallace, John H., Renfew	Berkshire.
Wallace, R. M. Kars	Berkshire.
Wallace, Wm. A., Kars	Berkshire.
Warner, D. W., Edmonton, Alta	Berkshire.
Washington, F. J., Weyburn, Sask	Yorkshires.
Watson, A. R. M., Weyburn, Sask	Berkshire.
Watson, Chris., Prosperity, Sask	Yorkshire.
Webb, Horatio, Sardis, B.C.	Yorkshire.
Weightman, M. C., Monteith, Man	Yorkshire.
Weiler, A. M., Wetaskiwin, Alta	Yorkshire.
Westney Bros., Audley	Yorkshire.
White, Ed. H., Battleford, Sask	Yorkshire.
White, O. J., Hamiota, Man	Yorkshire.
White, S. H. Company, Limited, Forest Glen, N.B.	———.
Wigg, Wm., Lewisville, Alta	Berkshire.
Williams, M. P., Vernon, B.C.	———.
Wilson, Arthur S., Hornby	Berkshire.
Wilson, J. C., Sine	Berkshire & Tamworth.
Wilson, J. J., Milton	Berkshire.
Wilson, J & Son, Fergus	Yorkshire.
Wilson, Wm. C. & Son, East Oro	Yorkshire.
Winters, D. B., Vermillion, Alta	Berkshire.
Wintle, Gilbert S., Richmond, Que	Chester White.
Wright, W. E., Glanworth	Chester White.
Wood, G. J. T., Islington	Berkshire.
Woodburn, Mrs. R. T., Lisgar Station, Que	Yorkshire.
Woodnoiss, E. Sidney, Binscarth, Man.	Berkshire.
Young, Cyrus, Bathgate, Alta	Berkshire.

MEMBERS OF THE WESTERN ONTARIO POULTRY ASSOCIATION AND VARIETIES ENTERED, WINTER FAIR, 1908.

Name and Address.	*Variety.*
Abbott, C. C., Stratford	Buff Orpingtons.
Adams, F. T., 127 Hamilton Rd., London	Partridge Wyandottes.
Agnew, G. F., 15 Lane St., Guelph	Buff Orpingtons.
Aird, P. E., Box 949, Montreal, Que	Buff Orpingtons, Game Bantams, A.O.V.
Allen, Gerald, Norway	Buff Wyandottes, Buff Orpingtons.
Allen, Gilbert, Bracondale	White Plymouth Rocks.
Alexander, W. J., Ashgrove	Turkeys.
Andrewes, Fred A., London	White Plymouth Rocks.
Archer, Wm., Paisley	White Wyandottes.
Armstrong, Geo. F., Bracebridge	White Wyandottes, Black and White Orpingtons.
Arthur, Jas., 731 Lorne Ave., London	Silver Laced Wyandottes.
Ashby, Alf. T., 198 Riverdale Ave., Toronto	Pigeons.
Baker, Geo., Simcoe	White Turkeys.
Barber, W., 118 Roncesvalles Av., Toronto	Games, Game Bantoms.
Barr, John A., Ingersoll	Buff Orpingtons, Dressed Poultry.
Baldwin, L. H., Forest Hill Rd., Toronto	White Wyandottes.
Barnes, Robert, 41 Colborne St , Toronto	Buff Orpingtons, Buff Cochin Bantams.
Bailey, J. E., St. Thomas	Birchen Game Bantams, Buff Cochin Bantams.
Baptie, Jas., Springville	Silver Laced Wyandottes, Hamburgs.
Bawden, John, Ridgetown	Buff Plymouth Rocks, Buff Orpingtons.
Baker, G. L., Hespeler	R.C. Rhode Island Reds.
Ballantyne, J. M., Bracebridge	S.C. Rhode Island Reds, G.P. Hamburgs, Silkies, Buff Cochin Bantams, Black Cochin Bantams, Japanese Black Tailed Bantams, Buff Leghorns, Rabbits, Hares.
Barber, Miss Z., Erin	Barred Plymouth Rocks, Dressed Poultry.
Baker Bros., Guelph	Turkeys, White ; Embden Geese, African Geese, Aylesbury Ducks, Rouen Ducks.
Bell, Guy, Brampton	White Plymouth Rocks.
Bell, W. J., Angus	R.C. White Leghorns, Turkey.
Bell, Fred., 400 Crawford St., Toronto	Pigeons.
Benson & Tregwin, Midland	Pigeons.
Becker, Peter P., Waterloo	Partridge Wyandottes, A.O.V. Fowls.
Becker, H. F., Waterloo	S. C. Brown Leghorns.
Beattie, W. H., Wilton Grove	Turkeys.
Bedford, John, 25 Hunter St., Toronto	Barred Plymouth Rocks.
Bibby, W. H., 114 Northumberl'd St., Guelph	White Plymouth Rocks, S.C. Rhode Island Reds, Buff Leghorns.
Blain, Jas. W., Milton	White Wyandottes.
Bogart, Frank C., Napanee	White Orpingtons.
Bower, Thos., Wingham	Buff Orpingtons, Pyle Game Bantams.
Bogue, G. & J., Strathroy	Black Wyandottes, Javas, Spanish, Dorkings, Houdans, Creve-Coeurs, LeFleche, Polands, G.S. Hamburgs, Sultans, Ducks.
Brill, L. Austin, 737 Princess Ave., London	Bantams.
Brock, C. W. P., Waterford	Buff Plymouth Rocks, Minorcas, Ducks.
Brown & Reid, 413 York Rd., Guelph	S.C. Rhode Island Reds.
Brown, John L., Seaforth	White Plymouth Rocks.
Bradley, John, Milton	S.C. Brown Leghorns.
Braun, E., Preston	S.C. Black Minorcas.
Burns, Gordon A., Paris	Silver Grey Dorkings, Dressed Poultry.
Bunt, Fred, Vallentyne	Dark Brahmas, Wyandottes, R.C. Rhode Island Reds, Games, Leghorns, Andalusians, Dorkings, Buff Orpingtons, S.S. Hamburgs.
Burn, Geo., Tillsonburg	Dominiques, Games, White Dorkings, Silver Polands, A. O. V. Fowls, Game Bantams, Japanese Bantams, Geese, Ducks, Pigeons, Black Leghorns.
Bullock, W. J., Gananoque	White Wyandottes.
Carter, Wm., Constance	R.C. White Leghorns, Hamburgs.
Carroll, J. A., St. James Park, London	White Plymouth Rocks, White Wyandottes.
Cadman, Wm., 679 Talbot St., St. Thomas	R.C. Brown Leghorns, S.S. Hamburgs, Black Rose Comb Bantams, Partridge Cochin Bantams.
Casey, Will, Mitchell	Indian Games, any variety, Rouen Ducks.
Campbell, J. M., Crosshill	Buff Plymouth Rocks.
Carbert, G. B., Campbellville	Dominiques, Geese.
Chant, Rev. J. H., Newburgh	R.C. Black Minorcas.

MEMBERS OF THE WESTERN ONTARIO POULTRY ASSOCIATION AND VARIETIES ENTERED, WINTER FAIR, 1908.

Name and Address.	*Variety.*
Clarke, J. W., Cainsville	Buff Orpingtons.
Cosh, H. V., Bobcaygeon	Andalusians.
Coote, W. F., Hamilton	Black Hamburgs.
Cornwall, Nate K., Thamesville	Buff Leghorns.
Collins, Wm., Union	Pyle Games, Black Orpingtons, Black Hamburgs, Pekin Ducks.
Cole, T. J., Bowmanville	Black Red Games.
Cook, G. C., Midland	Buff Wyandottes, S.C. Black Minorcas.
Cook, Frank & Son, Midland	Games, Pigeons.
Cooper, John H , Seaforth	White Wyandottes.
Crowe, John, 275 Woolwich St., Guelph	Pyle Game Bantams.
Crowe, Chas. R., 284 Woolwich St., Guelph.	Game Bantams.
Crane, Alfred C., Eden Mills	Turkeys, Ducks.
Currier, Chas. H., 196 Shaw St., Toronto	Pigeons.
Cullis & Lean, Powles Corners	Bronze Turkeys.
Daniel, C. J., 196 River St., Toronto	Silver Laced Wyandottes, S. C. Rhode Island Reds, Black Sumatra Games, Black Orpingtons.
Daniel, Wm., Plattsville	Wyandottes.
Day, John, 17 Menitt St., St. Catharines	S. C. Rhode Island Reds.
Daley, J. F., Seaforth	White Wyandottes.
Dawson, W., Niagara-on-the-Lake	Wyandottes, Orpingtons, Bantams.
Deverell, E. M., Whitby	Buff Cochins.
Devitt, A., Berlin	White Wyandottes.
Dickie, R. T., 395 Oxford St., London	Brahma Bantams.
Dinner, R., St. Thomas	Black Wyandottes.
Douglas, D. & Sons, Mitchell	S.C. White Leghorns, Bronze Turkeys, Toulouse Geese, Pekin Ducks.
Doidge & McNeil, 30 Cartwright St., London.	Indian Game Bantams, Bantams.
Doan, A. E., Box 61, Watford	Black Leghorns.
Donovan, H. B., 14 Bank St., Toronto	Silkies, Game Bantams, Bantams, Ducks.
Dunne, H., 1492 Queen St. West, Toronto	S. C. Black Minorcas.
Dundas, James, Deer Park	Buff Leghorns, Buff Wyandottes.
Durst Bros., Benmiller	S. C. White Leghorns.
Edsall, J. H., Bowmanville	Black Leghorns.
Elwood, Jack, 197 Victor Ave., Toronto	Pigeons.
Elliott, Geo. & Co., Stevenson Ave., East Toronto	White Plymouth Rocks, Houdans, Buff Wyandottes.
Elliott, W. J., 96 Queenston St., St. Catharines.	S.C. Black Minorcas, Black Red Games.
Emrick, Henry, Bridgeburg	Cochins.
Engel, A. J., Waterloo	S.C. Brown Leghorns, White Minorcas.
Evans, C. M., 31 Euclid Ave., London	Silver Pencilled Wyandottes.
Eyer, John H., 580 Avenue Rd., Toronto	Barred Plymouth Rocks, S.C. White Leghorns.
Faulds, T. A., 11 Victor St., London	Minorcas.
Ferguson, Wm., 249 West St., Brantford	S.C. White Leghorns.
Finchamp & Topping, 462 Simcoe St., London.	Games.
Fidler, J. E., Brockville	Partridge Wyandottes.
Flawn, Alfred, 130 Horton St., London	Silver Laced Wyandottes, Indian Game Bantams.
Ford, Jas. & Son, Drumquin	Golden Laced Wyandottes, Turkeys.
Foster, Jos., Brampton	Plymouth Rocks, Dorkings, Orpingtons, A.O.V. Fowls.
Fox, Wm., 597 King St. West, Toronto	Cavies, Belgian Hares.
Fraleigh, E., St. Marys	Black Orpingtons.
Fraleigh, H., Forest	Black Cochin Bantams.
Furminger, S. D., St. Catharines	Ducks.
Gallinger, F. H., South End	Black Leghorns.
Gendron, A. R., Penetanguishene	S.C. Rhode Island Reds.
Glass, S. F., London	Partridge Wyandottes.
Gorvett, Chas., Sparta	S.C. Black Minorcas, Andalusians.
Goldie, Roswell, Perth St., Guelph	Silver Grey Dorkings.
Goebel, A., Mitchell	Wyandottes, Indian Games, S.C. Black Minorcas.
Gormley, John, Pickering	Barred Plymouth Rocks.
Greenshields, J. S., Danville	Pigeons.
Graham, A. W., 16 Margaret St., St. Thomas.	Wyandottes, R.C. Rhode Island Reds.
Grant, R. B., Paisley	S.C. Black Minorcas.
Grier, F. H. & P. L., Cavers St., Owen Sound.	Rhode Island Reds, Leghorns, S. C. White Andalusians, Buff Orpingtons, A.O.V. Fowls, A.O.V. Ducks.

MEMBERS OF THE WESTERN ONTARIO POULTRY ASSOCIATION AND VARIETIES ENTERED, WINTER FAIR, 1908.—*Continued.*

Name and Address.	*Variety.*
Grigg, A. J., Clinton, Ont.	Games, Black Reds, Game Bantams.
Graham, R. B., Galt, Ont.	Leghorns, S.C. Buff.
Grieve, G. Wilson, Hastings St., Parkhill	Wyandottes.
Graham Bros., Parkhill	Leghorns, S. C. White.
Gurney, W. A., 908 Princess Ave., London.	Leghorns, S.C. Brown.
Harper, J. A , Waterloo, Ont.	Game Bantams, Brown Reds.
Hamm, Perry, 796 Gerrard St., East, Toronto.	Pigeons.
Hall, Chas. & Son, Trafalgar, Ont.	Plymouth Rocks, Barred; White Wyandottes, Pyle Game Bantams.
Hart & Grimoldby, Box 21, Owen Sound	Game Bantams
Hatton, J. & T., 780 Dundas St., London, Ont.	Pigeons, Game Bantams, Pyle.
Harrison, Jos., Oak St., Collingwood, Ont.	Leghorns, S.C. White.
Handley, Jno., 20 Lowell St., Galt.	Cochins, Partridge; Games, Indian; Leghorns, S.C. Brown.
Henry, Jas., 62 Bellevue St., Guelph, Ont.	Plymouth Rocks, Barred.
Hellyer. A.W. E., 69 Belmont Ave., Ottawa.	Orpingtons, Buff.
Henderson, G. G., Hamilton	Leghorns, S.C. Brown.
Henderson & Billings, St. Marys	Wyandottes, Silver Laced; Leghorns, R.C. Brown.
Hewitt, Jack, St. Marie St., Collingwood	Bantams.
Hintonburg Poultry Yards, 981 Wellington St., Ottawa, Ont.	Wyandottes; Orpingtons, Black.
Hill, Lyman H., Jackson, Michigan	Plymouth Rocks, White.
Hoffman, H. A., Ridgetown, Ont.	Orpingtons.
Hogarth, Wm. E., Hensall, Ont.	Plymouth Rocks, White; Leghorns, S.C. White.
Hoover, M. R., Locust Hill	Leghorns, R.C. White.
Hood, W. J., 17 McTague St., Guelph, Ont.	Orpingtons, Buff; Bantam Cochin, Buff.
Hodge, Jas., East Toronto.	Plymouth Rocks, Barred; Orpingtons, Black.
Howard, W., Box 372, Guelph	Wyandottes, Black; Bantams, G. Seabright; Bantams, Cochin Buff.
Howard, G. T., Box 372, Guelph, Ont.	Andalusians; Game Bantams, Any Other Variety; Bantams, A.O.V.
Hockin, Chas., London.	Plymouth Rocks, Barred.
Hodgkin, F. W., 29 Edwin St., Guelph.	Leghorns, Black; Canaries.
Holden, Geo. F., Port Dover, Ont.	Plymouth Rocks, Barred.
Holmhurst Poultry Yards, Whitby, Ont.	Cochin, Buff.
Hughes & Taylor, Court House, London.	Rhode Island Reds.
Innes, Jno., Rockwood, Ont.	Silkies
Jarvis, Jno. W., 153 Wreay St., London	Light Brahmas.
Jefferies, E., 244 Bain Ave., Toronto.	Leghorns, Buff.
Karn, H., 174 Water St., Guelph, Ont.	Ducks, A.O.V.
Kerns, Leslie, Freeman, Ont.	Plymouth Rocks, Barred.
Kemp & Waterman, 39 Elmwood Ave., London	Orpingtons, Black.
Kellium, H. & J.	
Kiley, T. J., 855 Maitland St., London	Game Bantams, Bantams.
Kinder, Geo. W , Box 99, Strathroy.	Red Cap.
Klager, Jno. E., Hespeler	Rhode Island Red.
Knight, Isaac T. & Co., Arkell	Geese, A.O.V. Ducks.
Knight, Alfred, Box 103, Davisville.	Pigeons.
Krouse, F. W., Box 587, Guelph, Ont.	Javas, Black; Rhode Island Reds; Game, A.O.V.; Dorkings, Silver Grey; Turkeys, Bronze.
Lawson, J., Almonte	Games.
Lemon, Wilbur, Lynden	Wyandottes.
Levan, Wilbert, 40 Inkerman St., Guelph, Ont.	Wyandottes, Black.
Limon, H. E., 10 St. Alban's St., Toronto	Pigeons.
Loehr, Erhard, New Hamburg.	Wyandottes, Silver Pencilled.
Luxton, A. G. H., Milton West	Dominiques; Geese, Brown Chinese; Turkeys, A.O.V.; Geese, A.O.V.
Lundy, John H., 70 Simcoe St., Niagara Falls.	Rhode Island Reds, R. C.
Lush, Harry T., 182 Dublin St., Peterboro.	Cochin, White; Orpingtons; Hamburgs.
Massie, Chas., Port Hope.	Wyandottes, White.
Maple Leaf Poultry Yards, 30 Garth St., Guelph.	Wyandottes
Martin, Irwin K., Galt, Ont.	Leghorns, R.C. White.
Mack, G. & H., 39 Central St., Guelph.	Wyandottes, White.
Magill, J. H., Sullivan St., Port Hope	Wyandottes, Golden Laced; Pigeons.
Martin, Jno. S., Port Dover.	Wyandottes, White.

MEMBERS OF THE WESTERN ONTARIO POULTRY ASSOCIATION AND VARIETIES ENTERED, WINTER FAIR, 1908. —*Continued.*

Name and Address.	*Variety.*
Meldrim, Wm. Jas., 161 East Avenue, N. Hamilton	Wyandottes.
Meyer, J. E., Hespeler, Ont.	Wyandottes.
Middlemiss, R. C., 120 William St., Brantford	Wyandottes, Columbian.
Millard, I. K., Box 173, Dundas	Plymouth Rocks, Barred.
Milne & Cavanagh, 70 Mill St., South Oshawa	Orpingtons, Buff.
Mihm, Wm. J., 1 Richardson St., Guelph	Rhode Island Reds, S.C.
Mitchell, Douglas, 42 Edenbourgh Rd, Guelph	Pigeons.
Montgomery, E. F., 27 E. Tiffany St., Guelph	S.C. Brown Leghorns.
Moore Bros., 199 Cannon St. East, Hamilton.	White Orpingtons.
Monroe, Geo. E., Forest	White Plymouth Rocks.
Montgomery, Jas. E., Brantford	Columbian Wyandottes.
Moyer, A. C., Waterloo	White Minorcas.
Mounce, J. E., Armstrong Mills	Utility Fowl.
Mountjoy, B. J., 132 Mount Pleasant Ave., London	R. C. Black Minorca.
Murray, W. G., Strathroy	Black Hamburgs, Indian Game Bantams, Bantams.
MacRae, J. N., 16 Spruce St., Galt	Bantams and R.C. Black Minorcas.
McAree, J. V., Mimico	A.O.V. Game, Bantams, Pigeons.
McCurdy, R., 176 Oxford St., London	Black Langshans.
McCormack, Jas. M., Rockton	Dorkings, Toulouse Geese, Rouen Ducks.
McDougall, A. & Son, Milton	Turkeys, Geese.
McDiarmid, Jas. S., Ingersoll	S.C. Brown Leghorns.
McEwen, P. J., Kertch	Buff Orpingtons.
McGlennon, Wallace, Colborne	Silver Grey Dorkings.
McIntosh & Halliday, Spencerville	Light Brahmas, Wyandottes, Leghorns, Houdans, Red Caps, A.O.V. Fowls.
McIntosh, G. E., Forest	Light Brahmas.
McKenzie, D., 150 Darling St., Brantford	Andalusian.
McKee, Harry, Norwich	Silver Grey Dorkings.
McLeod, Norman, 129 John St., London	White Wyandottes.
McLeod, Kenneth A., 17 Winnet St., Brantford	Leghorns.
McLeod, W. J., 26 Evergreen Ave., London	Black Leghorns.
McMaster, W. A., Guelph	R.C. Rhode Island Reds.
McNeil, Wm., 778 Waterloo St., London	Polands, A.O.V. Fowls.
McPherson, John, 57 Dundas St., London	Golden-Laced Wyandottes.
Northey, J. A., 42 Forest Hill Rd., Toronto	Buff Cochin Bantams.
Oke, Richard, Box 361, London	Partridge Cochins, Javas, Black Orpingtons, Creve-Coeurs, LaFleche, Hamburgs, Sultans, Bantams.
Orr & Creeden, 54 Albion St., Brantford	S.C. Brown Leghorns.
Osgoode, Roy, Preston	Pigeons.
Partlo, H. W., Ingersoll	Light Brahmas, Brahma Bantams.
Parrott, Thos, Collingwood	Games.
Patterson, Robt., Wellington St., Guelph	Silver Pencilled Wyandottes, Black Orpingtons.
Parkinson, J. W., Crumlin	Pyle Games.
Parkinson, B. L., 151 Horton St., London	Columbian Wyandottes.
Peter Pan Poultry Farm, 92 Bellevue St., Guelph	Barred Plymouth Rocks.
Pearson, W., 249 Suffolk St., Guelph	Game Bantams, Bantams, S.C. Rhode Island Reds.
Peep O'Day Poultry Farm, 92 Carling St., London	Wyandottes.
Penwarden, E. O., 20 Jackson St., St. Thomas	Houdans.
Peer, Gideon, 435 Metcalfe St., Guelph	Barred Plymouth Rocks, White Wyandottes, White Orpingtons.
Philpot, Jack, 12 Wellington St., Guelph	Barred Plymouth Rocks, Black Wyandottes, S.C. Rhode Island Reds, A.O.V. Fowls, White Cochin Bantams, Black Cochin Bantams.
Poole, G. & H., 124 Northumberland St., Guelph	Bantams, Pigeons.
Pranschke, W. C., 86 Concord St., Ottawa.	Columbian Wyandottes.
Pringle, John, 187 Wortley Rd., London	Barred Plymouth Rocks.
Ramsden, Horace, 73 Ashdale Ave., Toronto	Buff Wyandottes.
Read, J. C., Owen Sound	White Minorcas.

MEMBERS OF THE WESTERN ONTARIO POULTRY ASSOCIATION AND VARIETIES ENTERED, WINTER FAIR, 1908.—*Continued.*

Name and Address.	*Variety.*
Reid, W. H., 35 Union St., Kingston	Pigeons.
Readwin, A. & T., Guelph	Wyandottes, Black Javas, Leghorns, S. S. Hamburgs, Silkies, A.O.V. Fowls, White Japanese Bantams, Pigeons.
Rice, Thos., Box 376, Whitby	White Plymouth Rocks, S. C. White Leghorns.
Ridler, L., Guelph	Langshans, White Orpingtons, A.O.V. Games, Pigeons, A.O.V. Rabbits.
Rook Bros., Prescott	Game Bantams.
Rosser Bros., 60 Close Ave., Toronto	Bantams.
Roy, J. B. A., St. Pie, Que.	Buff Orpingtons.
Routledge, C. G., Davisville	S.C. Rhode Island Reds.
Roberts, J. W., 34 West Ave., St. Thomas.	Black Red Games.
Robertson, Geo., Box 242, Ottawa	Plymouth Rocks, Indian Games, any variety, Andalusians, Dorkings, R.C. White Leghorns, Black Leghorns, Spanish.
Robertson, Geo. A., St. Catharines	White Plymouth Rocks.
Ross, Harry A., 91 Waterloo Ave., Guelph.	White Wyandottes.
Rundle, S., Guelph	Partridge Wyandottes.
Russell, Jos., 437 Jarvis St., Toronto	White Wyandottes, S.C. Rhode Island Reds.
Rymer, Chas. H., 9 Nelson St., St. Catharines	Wyandottes, Buff Orpingtons.
Samuel, J. Hughes, 22 Berkeley Ave., Norway	Buff Wyandottes.
Sanderson, J. C., Gravel Road, St. Thomas.	Buff Wyandottes.
Sage, L. C., Wellington Rd., London	Dark Brahmas, Partridge Wyandottes.
Saunders, E., 592 Maitland St., London	Black Sumatra Games, R.C. Brown Leghorns, Silkies.
Scanlon Bros., Ennotville	Geese, Pekin Ducks.
Schierholtz, Otto, Elmira	White Plymouth Rocks, A.O.V. Fowls.
Scott, Rev. W. N, Athens	Silver Pencilled Wyandottes, A.O.V. Fowls.
Schelly Bros., Brantford	Columbian Wyandottes.
Scoyne, Chester, 80 Pipe Line Rd., London.	Black Orpingtons.
Scott, Peter, Box 227, Guelph	S.C. Brown Leghorns.
Scott, T. H., 39 Elgin St., St. Thomas	Columbian Wyandottes, R.C. Black Minorcas.
Sellers, Stephen, Zephyr	Plymouth Bocks, Indian Games, any variety, S.C. White Leghorns, Buff Leghorns, Spanish, A. O.V. Geese, Ducks.
Shephardson, Geo. M., Sombra	White Plymouth Rocks.
Shaw, Frank, 75 Hughes St., St. Thomas	Black Sumatra Games.
Shaw, John McE., Forest	Bantams.
Sherlock, Thos., 945 Lorne Ave., London	Game Bantams.
Shea, Thos. M., Fergus	Geese, Ducks.
Sherrick, Caleb, 199 Park St., Detroit, Mich.	Columbian Wyandottes.
Slessor, W. J., 520 Adelaide St., London	Bantams.
Smith, Joe. R., Strathroy	Black Wyandottes, Bantams.
Smith, Adolph, 151 Elizabeth St., Guelph.	Andalusians, A.O.V. Fowls.
Smith, Wm., 14 Elmer Ave., Kew Beach, Toronto	A.O.V. Games, S.C. Black Minorcas.
Small, J. A., 502 St. Clarens Ave., Toronto.	Buff Cochins, Polands.
Snyder, Elias, Burgessville	Barred Plymouth Rocks.
Snetsinger, James, Eamers' Corners	Dark Brahmas, White Plymouth Rocks, Leghorns, White Orpingtons, Pekin Ducks.
Spry & Mick, 144 Dundas St., Toronto	Buff Wyandottes.
Spiars Bros., Guelph	Game Bantams, Belgian Hares.
Steer, W., 170 Hamilton Rd., London	Pigeons.
Stapleford, S., Watford	White Plymouth Rocks, Black Red Games.
Streib, Jacob, West Lorne	S.C. Brown Leghorns.
Sheward, Bert, 133 Neeve St., Guelph	S.C. Rhode Island Reds, Pigeons.
Stewart, Howard, 85 Broadview Ave, Toronto	Pigeons.
Syer, E., Milton	Dominiques, Indian Games, any variety, S.C. White Leghorns.
Taylor, C. M., Lyu	Buff Wyandottes.
Telfer, Wm., Brantford	Leghorns.
Teale, W. J., 21 McTague St., Guelph	Black Sumatra Games, Bantams.
Tew, Richard, 9 Berkley Ave., Norway	R.C. Rhode Island Reds.

MEMBERS OF THE WESTERN ONTARIO POULTRY ASSOCIATION AND VARIETIES ENTERED, WINTER FAIR, 1908.—*Concluded.*

Name and Address.	*Variety.*
Tilt, C. A. R., Doon	Dark Brahmas, Black Cochins. Black Langshans, Bantams, Geese, Ducks.
Tottle, Chas. V., Church St., Weston	Silver Grey Dorkings.
Tovell, C. H., Galt	S.C. Buff Leghorns.
Trimble, Geo. D., 68 Willoughby Ave., W. Toronto	White Fantails.
Traplin, T. H., Hespeler	White Wyandottes, Orpingtons.
Tyson & McMaster, Melleville St., Guelph	Game Bantams.
Vickers, Thos., Owen Sound	White Minorcas, Buff Orpingtons.
Walker, W. R., 43 Surrey St., Guelph	Game Bantams.
Watson, Edwin D., 30 Charles St., Guelph	Black Cochin Bantams.
Wait, J. G., Wicklow	S. C. White Leghorns, Buff Orpingtons.
Warrington, J. H., Cornwall	Black Wyandottes, Black Javas, Spanish, Dorkings, Creve Coeurs, Lafleche.
Warder, A. B., Spry	Pigeons.
Wankel, Emil & Son, Waterloo	Rhode Island Reds.
Wales, F., Milton	Partridge Cochins, Black Langshans, S.C. White Leghorns, Silver Grey Dorkings.
Waters, Mrs. Chas., 13 McIntyre St., St. Thomas	Light Brahmas.
Westbrook, Jas. H., 553 Dundas St., London	Black Rose Comb Bantams.
Wells, Bros., 898 Dundas St., London	Red Caps.
Wheadon, R. L., 146 London Rd., Guelph	Houdans, Black Hamburgs, Bantams.
Whitney, C. J., Galt	White Plymouth Rocks.
Wilson, C. H., Hawkestone	Dark Brahmas, Partridge Cochins, R.C. Brown Leghorns.
Wilson, Wm., 219 Grange St., Guelph	White Wyandottes.
Wismer, H. F., St. Thomas	Indian Runner Ducks.
Witler, Clayton, 200 Glasgow St., Berlin	Black Javas.
Worrod, T., Angus	Turkeys.
Worthington, C. D., 43 Ontario St., Guelph	Andalusians, Rhode Island Reds.
Wright, W. E., Glanworth	Red Caps, Turkeys.
Wyatt, Hugh, London	Buff Cochins, White Wyandottes, Partridge Cochin Bantams.
Yakes, Harvey B., 220 West St., Brantford.	S.C. Brown Leghorns.

MEMBERS OF THE EASTERN ONTARIO POULTRY ASSOCIATION AND VARIETIES ENTERED AT THE EASTERN ONTARIO LIVE STOCK AND POULTRY SHOW, 1909.

Aird, P. E., Montreal Annex, Que	Buff Orpingtons.
Allan, John O., Scotch Line	S. C. White Leghorns.
Alexander, Dr. D. B., Shawville, Que	Buff Orpingtons.
Alexander, G. W., Beachburg	Barred Plymouth Rocks.
Armstrong, Adam A., Fergus	Brahmas, Cochins, Ply mouth Rocks, Wyandottes, Minorcas, Orpingtons.
Baker Bros., Guelph	Andalusians, Water Fowls.
Baker, Geo., Simcoe	Turkeys.
Baptie, H., Springville	Silver Wyandottes, Hamburgs.
Barber, W., 118 Roncesvalles Ave., Toronto	Games, Game Bantams.
Barrett, J. A., Catharine St., Ottawa	W. C. B. Polands.
Beaton & Stoate, Thornton St., Ottawa	White Wyandottes, Buff Cochin Bantams.
Becker, H. F., Waterloo	S. C. Brown Leghorns.
Belford, J. A., 22 Creighton St., Ottawa	White Orpingtons, Pigeons.
Benjamin, E. H., 125 Arthur St., Ottawa	Old English or Pit Games.
Benson, J. A., Billings Bridge	White Minorcas.
Blakely, R. E., 68 John St., Ottawa	Buff Wyandottes, Pigeons.
Bogue, G. & J., Strathroy	Cochins, Wyandottes, Javas, Spanish, Dorkings, Houdans, Creve-Coeurs, LaFleche, Hamburgs, Polands, Bantams, Ducks.
Bradley, Geo R., Carsonby	Turkeys.
Bradley, T., 117 McDonald St., Ottawa	S. C. Brown Leghorns, Buff Cochin Bantams.
Brown, Galt E., Point Fortune, Que	Light Brahmas, White Wyandottes, Games, Black Minorcas, Buff Orpingtons, Hamburgs, Polands, Bantams.

MEMBERS OF THE EASTERN ONTARIO POULTRY ASSOCIATION AND VARIETIES ENTERED AT THE EASTERN ONTARIO LIVE STOCK AND POULTRY SHOW, 1909.—*Continued.*

Name and Address.	*Variety.*
Bulloch, W. J., Gananoque	White Wyandottes.
Carleton, W. H., 110 Stanley Ave., Ottawa.	S. C. White Leghorns.
Clark, H., 267 East Ave., Ottawa East	Silver Wyandottes.
Code, R. N., Perth	White Wyandottes.
Collins, G. H. A., Cumming's Bridge	S. C. Brown Leghorns.
Cornish, C. C., 359 Somerset St., Ottawa	Light Brahmas, Black Red Game Bantams, Buff Cochin Bantams, Pigeons.
Craig, Wm , 254 Flora St., Ottawa	Plymouth Rocks.
Crouch, Miss Sarah, Billings Bridge	White Leghorns.
Currier, C. H., 196 Shaw St., Toronto	Silver Wyandottes.
Dalglish, Jas. A., c/o John M. Garland, Son & Co., Ottawa	Rhode Island Reds.
Dallimore, Edward K., 18 Spruce St., Toronto.	Pigeons.
Devitt, A., 10 Homewood Ave., Berlin	White Wyandottes.
Doidge & McNeil, 30 Cartwright St., London.	Game Bantams, Bantams.
Dowler, Willie, Billings Bridge	Pigeons.
Dunlop, T. G., Spencerville	Brahmas, White Wyandotte, Andalusians.
Dynes. Alex., Hintonburg	Barred Plymouth Rocks, Pekin Ducks.
Ellis, Sydney E., Renfrew	S. C. Buff Leghorns.
Ellis, Wm., Prescott	Black Minorcas, Buff Orpingtons.
Engel, A. J., Waterloo	S. C. Brown Leghorns.
Evans, E. M., 31 Euclid Ave., London	Wyandottes.
Fallis, R., Box 7, Ottawa South	White Wyandottes.
Fennell, W. H., Brockville	S. S. Hamburgs.
Fidler, J. E., Brockville	Barred Plymouth Rocks, Partridge Wyandottes.
Fortier, Jos , St. Scholastique, Que	Plymouth Rocks.
Foster, A. H., Twin Elm	Turkeys.
Fraleigh, Howard, Forest	Bantams.
Fraser, J. W., Renfrew	Black Minorcas.
Frith, E. R., Maxville	Wyandottes, Old English or Pit Games, Black Minorcas, Pigeons.
Gill, John I., Ottawa	Rhode Island Reds, Leghorns.
Goodall, E. L., 305 Wellington St., Ottawa.	Barred Plymouth Rocks.
Grimes, J. Allan, 97 McLaren St., Ottawa.	Rhode Island Reds.
Gurney, W. A., 908 Princess Ave., London.	Barred Plymouth Rocks, S.C. Brown Leghorns.
Hamilton & Scoyne, 29 Orchard St., London,	Orpingtons, A.O.V.
Harkness, Miss C. M., Arnprior	Game Bantams, A.O.V.
Hellyer, A. W. E., Belmont Ave., Ottawa.	Buff Orpingtons.
Henderson, G. G., Hamilton	S.C. Brown Leghorns.
Hiawatha Pigeon Lofts, 635 St. Patrick St., Ottawa	Pigeons.
Hicks & Lapointe, Perth	White Wyandottes, S.C. Black Minorcas.
Highland Park Poultry Yards, Westboro'	White Wyandottes.
Higman, Geo., Sr., 61 Sussex St., Ottawa	Wyandottes, Faverolles.
Higman, Geo., Jr., 97 College Ave., Ottawa.	Partridge Wyandottes.
Hillhouse, A. P., Bondville, Que	Plymouth Rocks, Wyandottes, Rhode Island Reds.
Hintonburg Poultry Yards, Ottawa	Plymouth Rocks, Wyandottes, Rhode Island Reds.
Hoffman, H. A., Ridgetown	Buff Orpingtons.
Hoover, M. R., Locust Hill	Barred Plymouth Rocks, Leghorns.
Hunt, B. J., Park Ave., Ottawa South	White Wyandottes.
James, F. A., 153 Centre St., Ottawa	Barred Plymouth Rocks.
Knight, Alfred, Davisville Ave., Davisville,	Pigeons.
Lake, G., 155 Russell Ave., Ottawa	White Wyandottes.
Lambertus, John A., Eganville	Barred Plymouth Rocks.
LaRose, Chas., Cornwall	Cochins, Barred Plymouth Rocks, Games, Leghorns, Andalusians,
Lawson, J., Almonte	Games.
Limon, E., 10 St. Alban's St., Toronto	Pigeons.
McGill, J. H., Port Hope	Golden Wyandottes, Pigeons.
Mason, John & Son, 188 Turner St., Ottawa,	Buff Plymouth Rocks, Buff Wyandottes, Buff Orpingtons.
Matheson, G. M., 69 Russell Ave., Ottawa	Partridge Wyandottes.
Moyer, A. C., Waterloo	White Minorcas.
Mulligan, Lawrence, Harbord	Pigeons.
Mulville, James, V., Westport	Buff Orpingtons.
Murphy, Joshua, Renfrew	Golden Wyandottes, R.C. Rhode Island Reds, S.C. White Leghorns.
Mutchmor & Co., 68 First Ave., Ottawa	Pigeons, Game Bantams.
McAree, J. V., Mimico	Games, Game Bantams, Pigeons.

MEMBERS OF THE EASTERN ONTARIO POULTRY ASSOCIATION AND VARIETIES ENTERED AT THE EASTERN ONTARIO LIVE STOCK AND POULTRY SHOW, 1909.—*Concluded.*

Name and Address.	*Variety.*
McCormack, Jas. L., 33 Murray St., Brantford	S.C. White Leghorns.
McDougal & Bedlow, Fairfield East	White Wyandottes, Buff Orpingtons, Houdans, Games, Spanish, Dorkings, Ducks.
McIntosh & Halliday, Spencerville	Dark Brahmas, Langshans, Plymouth Rocks, White Wyandottes, Rhode Island Reds, Pyle Games, S.C. Buff Leghorns, White Minorcas, Orpingtons, Houdans, Faverolles.
McKellar, Donald, Hawkesbury	S.C. White Leghorns.
McNeil, Wm., 778 Waterloo St., London	Polands.
Neate, M. C., 33 Sussex St., Ottawa	Barred Plymouth Rocks.
Oke, Richard, Box 361, London	Partridge Cochins, R.C. Leghorns, Creve-Coeurs, LaFleche, Hamburgs, Bantams.
Osborne, W. M., Box 472, Brockville	S.C. Black Leghorns, Black Minorcas.
Palen, R., 107 Arlington Ave., Ottawa	Rhode Island Reds.
Partlo, H. W., Ingersoll	Light Brahmas.
Peaker, H. M., 75 McKay St., Ottawa	Black Minorcas.
Peaker, Morley, 75 McKay St., Ottawa	Buff Cochins.
Pillar, Chesley, Russell	Turkeys.
Pranschke, W. C., 86 Concord St., Ottawa	Columbian Wyandottes.
Pringle, John, 187 Wortley Road, London	Barred Plymouth Rocks.
Pritchard Bros., North Wakefield, Que	Light Brahmas, Buff Cochins, Langshans, Games, Leghorns.
Rawlings, E. A., Forest	Orpingtons.
Readwin, A. & T., 236 Paisley St., Guelph	Leghorns, Pigeons.
Reason, J. F., Ottawa West	R. C. Rhode Island Reds.
Reid, W. H., 35 Union St., Kingston	Cochins, Langshans, Wyandottes, Javas, Games, Leghorns, Orpingtons, Dorkings, Houdans, Game Bantams, Bantams, Ducks, Pigeons.
Reid, Emmet, Almonte	S. S. Hamburgs.
Ridler, L., Guelph	Pigeons.
Robertson, Geo., Box 242, Ottawa	Plymouth Rocks, White Wyandottes, Javas, Games, Leghorns, Spanish, Andalusians, Dorkings, LaFleche, Faverolles, Polands, Ducks, Belgian Hares.
Roger, R. M., 457 Metcalfe St., Ottawa	Black Minorcas.
Rolland, Jean, Mont Rolland	Barred Plymouth Rocks.
Rook Bros., Prescott	Game Bantams.
Russell, Jos., 1308 Queen St. East, Toronto	Wyandottes, Rhode Island Reds.
Scott & Milroy, Athens	Wyandottes, Leghorns, A. O. S. V. Fowls.
Shaw & McIntosh, Forest	Bantams.
Sheward, Bert, 133 Neeve St., Guelph	Pigeons.
Slessor, W. J., 520 Adelaide St., London	Bantams.
Slipp, W. H., 208 Patterson Ave., Ottawa	Orpingtons.
Smith, Bert, Brockville	S. C. Brown Leghorns.
Snelling, W. H., Rockcliffe Park, Ottawa	Orpingtons.
Snetsinger, Jas., Eamers Corners	Dark Brahmas, Plymouth Rocks, Wyandottes, Javas, Leghorns, Pekin Ducks.
Stagg, Frank, St. Catharines	Buff Leghorns.
Stewart, A M., Dalmeny	Plymouth Rocks.
Stiles, Rev. T. J., Cornwall	White Wyandottes.
Taylor, C. M., Lyn	Buff Wyandottes.
Teale, W. J., 21 McTague St., Guelph	Game Bantams.
Thompson, A., Allan's Corners	Turkeys, Geese, Ducks.
Tilden, Jas. L., Clayton	Barred Plymouth Rocks.
Tomalin, Jos., 593 Ossington Av., Toronto	White Plymouth Rocks, Black Minorcas.
Tooker & Bowey, Brockville	Cochins, Wyandottes.
Tozer, H. R. K., 509 Richard St., London	Black Cochins, White Plymouth Rocks, Games, Game Bantams, R. C. Brown Leghorns, Bantams.
Wales, F., Milton	Partridge Cochins, Langshans, S. C. White Leghorns, A. O. S. V. Fowls, Bantams.
Warrington, J. H., Cornwall	Creve-Coeurs, LaFleche Polands.
Westbury, Frank H., 920 Elias St., London	Barred Plymouth Rocks.
Wheadon & Pearson, 146 London Rd., Guelph	Rhode Island Reds, Minorcas, Hamburgs, Game Bantams, Bantams.
Wilson, C. H. Hawkestone	Partridge Cochins, R. C. Brown Leghorns, Silver Grey Dorkings.
Wyatt, Hugh, London	Buff Cochins.
Zavitz, L. V., 81 Fourth Ave., Ottawa	Black Minorcas, S. Sebright Bantams.

MEMBERS OF THE ONTARIO HORSE BREEDER'S ASSOCIATION FOR 1909.

Through Canadian Shire Horse Association.

Allen, Geo., Paris.
Blake, Jos., Clinton.
Breckon, John, Appleby.
Burr, John F., Waubuno.
Cornell, Geo., Lyn.
Devins, J. A. Kleinburg.
Drury, Frank, Charing Cross.
Evans, W. J., Lawrence Station.
Fletcher, Jos., Oxford Mills.
Gardhouse, C. S., Humber.
Gardhouse, J. M., Weston.
Gardhouse & Sons, John, Highfield.
Geary, C. K., St. Thomas.
George, H. E., Crampton.
Hogate, J. B., Weston.
Homer-Dixon, Mrs., Niagara Falls South.
Laking, Wm., Haliburton.
Lee, John, Hockley.
Morris & Wellington, Fonthill.
Neil & Son, F. H., Lucan.
Pearson & Son, Wm., Hamilton.
Pye, Thos., Woodstock.
Reid, Archie, Jarratt's Corners.
Sexsmith, M. W., Ridgeway.

Through Canadian Hackney Horse Society.

Allison, J. Wesley, Morrisburg.
Beith, Hon. Robert, Bowmanville.
Boag & Son, John A., Ravenshoe.
Brooks, E. W., Stirling.
Butler, W. E., Ingersoll.
Graham Bros., Claremont.
Graham Renfrew Co., Bedford Park.
Hassard, T. H., Millbrook.
Hodgkinson & Tisdale, Beaverton.
Hogate, J. B., Weston.
Larkin, John D., Queenston.
Mercer, Thos., Markdale.
Oak Park Stock Farm, Brantford.
Sorby, O., Guelph.
Spencley, H. J., Box Grove.

Through Canadian Thoroughbred Horse Association.

Cohen, Ralph, H., Amigari.
Crittenden, Thos. H., Toronto.
Doane, Fred, 631 Yonge St., Toronto.
Hare, John, Toronto.
Hendrie, Geo. M., Hamilton.
Hendrie, William, (Estate), Hamilton.
Ibister, J. Roy, Hamilton.
Kilgour, James L., Hamilton.
McKenzie, A. W. I., Toronto.
Presgrave, Captain W. F., c/o W. Harper, McKinnon Bldg., Toronto.
Seagram, Jos. E., Waterloo.
Webster, Dr. R. E., Ottawa.

Through Canadian Clydesdale Horse Association.

Adams, Chas. A., Brantford.
Agar, Robert, Nashville.
Augustus, C., Brooklin.
Aitchison, And., Guelph.
Alsop, Jos., Glasgow.
Alton, A. P. & Son, Appleby.
Anderson, John, Omemee.
Anderson, Jos. T., Kincardine.
Annan, And., Dunbarton.
Annett, W. B., Walnut.
Annis, Edward, Solina.
Annis, Geo. F., Courtice.
Arbogast, Peter, Sebringville.
Armstrong, John, Motherwell.
Armstrong, Robert, Strongville.
Armstrong, Thos., L'Amaroux.
Armstrong, T. H., Kinburn.
Armstrong, Wm., Locust Hill.
Ashford, Jas. E., Ryckman's Corners.
Attridge, G. A., Clachan.
Baker, Allan, Alberton.
Baker, Ira, Cainsville.
Baker, Thos., Solina.
Balsdon, John I., Markham.
Baptie, Jas., Springville.
Barclay Bros., Barclay.
Batty, W. F., Brooklin.
Bawden & McDonell, Exeter.
Bean & Son, Chas., Brinsley.
Beare, Jno. S., Cedar Grove.
Beattie, J. J., Mt. Brydges.
Begg, W. A., Tiverton.
Beith, Hon. Robert, Bowmanville.
Bell & Son, Geo. A., Lowville.
Bell, W. M., Springford.
Bell, Wm., Avonton.
Bennett, C. R., Russelton.
Bennett, Delbert, Russelton.
Black, John, Kilsyth.
Blanchard, W. F., Newmarket.
Boag, A. W., Queensville.
Boag, H. G., Barrie.
Boag & Son, John A., Ravenshoe.
Bond, S., Columbus.
Borland, J. G., Claremont.
Boules, Levi S., Springville.
Boyes, John, Jr. Churchill.
Boyle, Wesley, Kinlough.
Boynton, W. G., Victoria Square.
Brady, Thos., Chatham.
Brecken, Thos. H., Orangeville.
Bright, John, Myrtle Station.
Bright, Wm., Raglan.
Brock, Wm., Winchelsea.
Brodie, G. A., Bethesda.
Brown, A. C., Epson.
Brown, John, Galt.
Brown, L. A., Fergus.

Through Canadian Clydesdale Horse Association.—Continued.

Brown, Wm., Milliken.
Bruce, Jas., Egbert.
Bunker, S. C., Pickering.
Burgess, Wellington, Norwood.
Burgess & Sons, Wm., Wallaceburg.
Burk, T. W., South March.
Burlingham, D., Wellington.
Burnett, Jos. Elgin Mills.
Burnett, Wm. R., Markdale.
Burns, David, Brooklin.
Burr, J. F., Waubuno.
Butler, W. E., Ingersoll.
Cairns, Thos., Dublin.
Calvert Bros., Buttonville.
Cameron, C., Etobicoke.
Cameron, J. Robinson, Hamilton.
Campbell, Jas., Bellwood.
Campbell, John, Harriston.
Campbell Bros., Alvinston.
Cargill & Son, H., Cargill.
Carstairs, D., Bomanton.
Chapman Bros., Kerby.
Christie, Peter, Manchester.
Cinnamon, John. Oshawa.
Clark, J. L., Norval.
Clarkson, R., Malton.
Clemens, A. E., Tyrone.
Coates, Jas., Shirley.
Cochrane, Geo, Enfield.
Cockburn, W. L., Cobourg.
Cole, W. R., Tyrone.
Colquhoun, Wm., Mitchell.
Columbus, D., Jarvis.
Conn, Robert, Heathcote.
Connor, J. W., Grant River.
Cooper, Wm., Fergus.
Cordiner, John, Ennotville.
Cousins, Robert, Whitby.
Coulson, A. O'Sullivan's Corners.
Coursey Bros., Lucan.
Coursey, T. & C. H., Lucan.
Cowie, G. R., Markham.
Cowie, J. W., Markham.
Cowie, R. B., Derryville.
Cox, Robert, Amber.
Cox, Robert, Huntley.
Coyte & Son, T., Port Hope.
Crago, F. A., Bowmanville.
Craven, John, Brinsley.
Crawford, A. M., Widder.
Crawford Bros., Brown's Corners.
Crawford, Geo., Oro Station.
Crawford, Wm., Carlingford.
Crichton, Jas., Scarboro Junction.
Crowell, Wm., Oshawa.
Culbert, Wesley, Saintsbury.
Dalgety Bros., Glencoe.
Darroch, A. G., Cotswold.
Davidson, Geo., Orono.
Davidson, Jas., Avonton.
Davidson, Jas. I., Balsam.
Davidson, John, Ashburn.
Davidson & Son, Geo., Cherrywood.
Davies, Robert, Todmorden.
Devitt & Sons, I., Freeman.
Dickieson & Son, Guelph.
Dickson Bros., Atwood.
Dingman, W. J., Balsam.
Disney & Son, J. E., Greenwood.
Dix, W. A., Fergus.
Doan Bros., Sable.
Doble, Wm. L., Sunderland.
Doig, Peter F., Fordwich.
Douglas, Alex., Markham.
Downing, H., Simcoe.
Doyle Bros., Mt. Carmel.
Duncan, Thos. G., Woodford.
Dundas, R. D., Springville.
Eadie, A. G., Vars.
Eadie, J. D., Vars.
Eadie, J. R., Russell.
Eaid, C. E., Simcoe.
Elliott, C. E., Mitchell.
Elliott, J. F., Oxford Centre.
Elliott, T. D., Bolton.
Elmore, Ed., Ekfrid.
Esdon, J. H., Bainsville.
Evans, Thos., St. Mary's.
Fairbairn, B., Sharon.
Farris, W. J., Bradford.
Faulds, W. M., Muncey.
Ferguson & Son, J. D., Mapleton.
Ferguson, Alex., Sonya.
Ferguson, S., Conn.
Ficht, Val., Oriel.
Flood, Daniel, Elginfield.
Follis, John, Ashley.
Ford, Geo. D., Galt.
Forgie, John, Claremont.
Forrester, Geo., Gormley.
Forster, W. D., Markham.
Forsyth, G. M., North Claremont.
Fraser, W. G. S., Park Hill.
Freel, J. C., Thamesford.
Fry, Henry, Nobleton.
Fuller, Edward, Mitchell.
Garbutt, Geo., Tullamore.
Gardhouse, J. M., Weston.
Gedcke, J. A., Fordwich.
Gibson, T. A., Wroxeter.
Gilles, John, Marden.
Gleeson, Jas. J., Markham.
Good, E. H., Richmond.
Gordon, John, Brooklin.
Gormley, A. G., Unionville.
Graham Bros., Claremont.
Graham, Geo., Weidman.
Graham, John, Udora.
Graham, John, Derry West.
Graham, T. J., Uxbridge.
Graham-Renfrew Co. Ltd., Bedford Park.
Grant, R. H., Hazeldean.
Grant, Rverson M., Bradford.
Grant, Wm., Markham.
Gray, Wm., Mayfield.
Gray, Jos. & Wm., Londesboro.
Greenless, Hugh, Bowmanville.
Gregg, Thos., Claremont.
Groat, Chas., Brooklin.
Grundy, R., Clandeboye.
Gunn & Son, D., Beaverton.
Hahn Bros., Hawkesville.
Hales, Jas. J., Chatham.

Through Canadian Clydesdale Horse Association.—Continued.

Hall, Nelson, Rockford.
Hall, Wm. G., Birnam.
Hamilton, Angus, Ravenshoe.
Hamilton, John, Lisgar.
Hand, Jas., Tancred.
Haulon, Henry, Rayside.
Harris, Leamon, Mt. Elgin.
Harris, Wm., Cattle Market Annex, Toronto.
Hartin, Chas., Stittsville.
Hassard, T. H., Markham.
Hastings, Ed., Almira.
Hayes, Geo., Columbus.
Helmkey, W., Armadale.
Henderson, A., Jerseyville.
Henderson, Geo., Keady.
Henderson, Jas., Belton.
Hepburn, Wm., Foley.
Herold, P., Tavistock.
Hickling, A., Minesing.
Hodgins, W. T., Hazeldean.
Hodgkinson & Tisdale, Beaverton.
Hogate, J. B. Weston.
Holtby, J. W., Manchester.
Holtby, R. M., Manchester.
Holtby, W. E., Brougham.
Holtby, W. W., Manchester.
Hoover, Isaiah, Stouffville.
Hosken, A. E., Cobourg.
Howard & Son, J. W., Amber.
Howard & Son, W. J., Concord.
Howden, T., Milton West.
Howitt, Jas., Altona.
Hume & Co., A., Menie.
Hummason, F., Embro.
Hunter, J. C., Danforth.
Hutchinson, John, Millbrook.
Innies, Alex., Clinton.
Innies, Alex., Brooksdale.
Innes, Jas. W., Woodstock.
Ironside, H. W., Puslinch.
Isaac, Alex., Cobourg.
Jackson, Henry W., Glen Allen.
Jackson, Richard, Alma.
Jackson & Son, Geo., Downsview
Jenkins, Jas., Oshawa.
Jewell, W. E., Bowmanville.
Johnston, Arthur, Greenwood.
Johnston, John, Cobblehill.
Johnston, John, Woodbridge.
Johnston, J. R., Springford.
Kelly, Jas., Fairview.
Kennedy Bros., Marden.
Kennedy, Michael, Pickering.
Kennedy, Wm., Nobleton.
Kent, Robert, Embro.
Kester, Orvil, Stouffville.
King, Frank, Fingerboard.
King, Marmaduke, Fingerboard.
Kissock, Samuel, Guthrie.
Kneeshaw, J. J., Bradford.
Knister, Elmer, Ruscomb.
Knox, Andrew, Tuscarora.
Kydd, Wm., Uxbridge.
Lamb, Geo. H., Tancred.
Langton, Thos., Braemar.
Larkin, J. D., Queenston.
Lavin & Richardson, Harriston.
Law & Son, Wm., Ringwood.
Lawrie, John, Malvern.
Leahy, Wm., Sunderland.
Leathers, W., Bethesda.
Lehman, A. B., Atha.
Leonard, Jas., Schomburg.
Leonard, W., Craigvale.
Lester, Ellory, Forest.
Lindsay, Jas. A., Fergus.
Lougheed, H. P., Heathcote.
Lowes, J. W., Bethany.
Lumley, Jos. E., Minesing.
Mc Alpine, Angus A., Edy's Mills
McArthur, Alex., Oro Station.
McArthur, A., Holiday.
McAvoy, C. C., Atha.
McBeth, D. G., St. Paul's Station.
McBrine, R., Chatsworth.
McCabe, J. A., Collingwood.
McCaig, Alex. Aberfoyle.
McCorquodale, W. M., Bennington.
McCowan, Jas., Brown's Corners.
McDiarmid, P. A., Alvinston.
McDonald Bros., Woodstock.
McDougal Jas., 57 Adelaide St. Toronto.
McDougall, Silas, Edgeley.
McEachren & Son, P. R., Eldon
McEachren, R., Argyle.
McElheron, Neil, Chatsworth
McEwen, Jas., Clifford.
McFarlane, Jas., Claremont
McFarlane, John, Dutton.
McGavin, J. J., Leadbury.
McGeachy, A. & D., Dutton.
McGeachy, D. & R., Coleraine.
McGregor, Alex., Uxbridge.
McIntyre, Alex., Cathcart.
McIntyre, Sharzel, St. Mary's
McKay, Hugh, Embro.
McKee, Alex., Sandhill.
McKeign, Colin, Strathroy.
McKenzie, John, Chatsworth.
McKinnon & Sons, D., Hillsburg.
McKinnon, G., Unionville.
McLevin, John, Hickson.
McMichael, T., Seaforth.
McMillan, John, North Keppel.
McMillan, R. J., Seaforth.
McNeilage, Jas., Eberts.
McNiven, A. F., St. Thomas.
McPhail, Neil, Sonya.
McPhee, H. H., Park Hill.
McTaggart, Jas., Sonya.
McTavish, Alex., Shakespeare.
McTavish, John, Shakespeare.
McVey, J. F., Metcalfe.
Mackey, Robert, North Gower.
Mackintosh, Wm., Burgoyne.
Mair, Jas., Peabody.
Major Bros., Whitevale.
Maloney, Patrick, Metropolitan.
Martin, Robert, Wexford.
Martin, T. H., Duncrief.
Mason, Leslie, L'Amaroux.
Matthewson, J., Brooklin.

Through Canadian Clydesdale Horse Association.—Continued.

Maxwell, Jas., Locust Hill.
Magill, Chas. L., Aurora.
Meharey, Wm., Russell.
Menzies, J. A., Wingham.
Mercer, Thos., Markdale.
Meyer, Frederick, Bethesda.
Meyers, Jacob S., St. Clements.
Middleton, G. & W., Claremont.
Miller, John J., Gowrie.
Miller, Robert, Stouffville.
Milne & Sons, R., Green River.
Milroy & Son, John, Cedar Grove.
Mitchell, J. R., Whitby.
Mitchell, Robert, Ivan.
Moffatt, Jas., Teeswater.
Moffatt, R. N., Fenelon Falls.
Montague, N. C., Jarvis.
Mooore, T. J., Kilsyth.
More, Jas., Kirkton.
More, W. R., Almonte.
Morgan, D. M., Claremont.
Morrison, J. D., Argyle.
Morrison, Peter, Argyle.
Mossip, Wm., St. Mary's.
Mountjoy, F., Enfield.
Munroe, Jno. A., Argyle.
Murison, Jas., Cedar Grove.
Murray, Alex., Palmerston.
Murta, J. J., Uxbridge.
Myles, C. E., Bedford Park.
Myles, Jas. A., Heathcote.
Neil & Sons, F. H., Lucan.
Newman, Robert, Bognor.
Nichol, Geo., Waubuno.
Nichols, R., Hagersville.
Noyes, Wm., Denfield.
O'Brien, T. R., Ponsonby.
Ogle, Ryerson, Blytheswood.
Oliver, W. R., Cobourg.
O'Neil & Co., London.
Ormiston, R. W., Cresswell.
Ormiston & Sons, Columbus.
Osborne, T. C., Whitby.
Pallett, Wm., Summerville.
Palmer, D. R., Thorndale.
Parker & Son, Thos., London.
Paton, Jas., Swinton Park.
Patterson Bros., Millbrook.
Patterson, John W., Denfield.
Patterson, En. Norwood.
Paxton, P. G., Tottenham.
Payton, Bernard, Conroy.
Peterson, Alex., Hawkesville.
Pettit & Sons, Freeman.
Pettit, R., Glenwillow.
Pinkerton, D., Pinkerton.
Plunket, Robert, Woodbridge.
Porter, Thos. H., Brooklin.
Potts, O., Simcoe.
Power, Truman, Bowmanville.
Prouse, S. J., Ingersoll.
Prout, Geo., Cedar Brae.
Pugh, W. D., Claremont.
Purtill, James, La Salette.
Quinlan, David, Ennismere.
Rae, Walter, St. Paul's Station.
Ramsay, W. J., Mongolia.
Ratcliffe Bros., Anderson.
Reeson, Herbert, Columbus.
Reid & Co., R., Hintonburg.
Reynolds, Fred., Enfield.
Richardson, Fred, Columbus.
Richardson, Jas., St. Paul's Station.
Richardson, F. P., Columbus.
Richardson, Wm. P., Columbus.
Roadhouse, Silas, Comber.
Robertson, A. J., Shakespeare.
Robinson, Wm., Markham.
Robinson & Son, Mrs. J. W., St. Mary's.
Robson, Jos., Telfer.
Rock, Thos., South March.
Ross, Dugald, Streetsville.
Ross, J. C., Jarvis.
Ross Bros., Nairn.
Rossiter, A., Crampton.
Rothwell, B., Ottawa.
Rundle, D., Sonya.
Schaefer, H., Maplewood.
Scharf, A., Cumming's Bridge.
Schell, M. & W., Woodstock.
Scott, Francis, Twin Elm.
Semple, Hugh, Hereward.
Sewell, David, Cedar Grove.
Sharpe, T. H., Brampton.
Shaw, Philip, Madina.
Shields, J. B., Mount Albert.
Shier, R., Cannington.
Sleightholm, J. A., Humber.
Sloane, A. C., Bradford.
Slugget, J. W., Mount Horeb.
Smart, Jas., Beeton.
Smilie, A. G., Hensall.
Smith, L. J., Manchester.
Smith, Neil, Brampton.
Smith & Richardson, Columbus.
Sorby, O., Guelph.
Spear, Thos., Cobourg.
Spearin, Geo., St. Mary's.
Spencer, C. H. J., Beaverton.
Sproule, Newton H., Schomburg.
Staples, Geo., Lifford.
Staples, Jos. F., Ida.
Stewart, John, Springbank.
Stewart, Robert, Winfield.
Stocks & Son, Jas., Columbus.
Story, Harry, Picton.
Story & Son, R., Crossland.
Stringer, Abe., Kingarf.
Summerfeldt, L., Unionville.
Tape, Frank, Highgate.
Taylor, Anson, Blackstock.
Taylor, Geo. B., Middleville.
Taylor, L. W., Stayner.
Taylor, Wm., Baldwin.
Thompson, Andrew, Watford.
Thompson, John, Belwood.
Thompson, Nathaniel, Orangeville.
Timmons, A. C., Winchester.
Tingle, Geo. A., Ellesmere.
Trachell, Fred, Shakespeare.
Tran. W. H., Cedar Grove.
Tremble, Geo., Bowmanville.
Trick, R., Unionville.
Trott & Son, Ed., Christina.

Through Canadian Clydesdale Horse Association.—Continued.

Underhill, Jas., Claremont.
Vance, David, Tavistock.
Vipond, John, Brooklin.
Wagg, Nelson, Claremont.
Wagg, Vincent, Unionville.
Wagster, Wm., Tavistock.
Wagg, Jas., Stouffville.
Walbrook, Wm., Hagersville.
Wallace, Geo. A., Ponsonby.
Walton, Guy, Ellesmere.
Ward, Edward, Greenbank.
Warner, Peter, Homer.
Watson, T. H., Sonya.
Watt, Robert, South March.
Watt, R. A. & J. A., Salem.
Way, R. G., Trenton.
Webster, Jas., Oakwood.
Webster, W. W., Lindsay.
Wells, A. B., King.
White, Geo., St. Mary's.
White & Sons, R., Linton.
White, Job, Ashburn.
White, T. & S., Birr.
Whiteway, G. G., Seagrave.
Whetstone, Jos., Kintore.
Wilkin, W. G., Harriston.
Wilson, Jas. A., Elginfield.
Wood, T. A. Bradford.
Wood, Wm., Bradford.
Woodill, Wm., Woodill.
Woodley, Wm., Dundas.
Woodward, Thos., Derryville.
Wyckoff, J. G. & E. L., Tyrell.
Yake, P., Kintore.
Young & Son, Wm., Mt. Brydges.
Young, W. H., Binkham.

REPORT

OF THE

FARMERS' INSTITUTES

OF THE

PROVINCE OF ONTARIO

1909

PART I.—FARMERS' INSTITUTES.

(PUBLISHED BY THE ONTARIO DEPARTMENT OF AGRICULTURE, TORONTO)

PRINTED BY ORDER OF
THE LEGISLATIVE ASSEMBLY OF ONTARIO

TORONTO:
Printed by L. K. CAMERON, Printer to the King's Most Excellent Majesty
1910

Printed by
WILLIAM BRIGGS,
29-37 Richmond Street West,
TORONTO

To the Honourable JOHN MORISON GIBSON, K.C., LL.D., etc., etc., etc.,

Lieutenant-Governor of the Province of Ontario.

MAY IT PLEASE YOUR HONOUR:

I have the pleasure to present herewith for the consideration of your Honour the Report of the Farmers' Institutes of Ontario for 1909.

Respectfully submitted,

JAMES S. DUFF,

Minister of Agriculture.

TORONTO, 1910.

CONTENTS.

	Page.
Letter of Transmission	5
Address: Hon. J. S. Duff	7
Superintendent's Address: G. A. Putnam	8
Opinions of Delegates *re* Farmers' Clubs	15
Some Phases of Short Course Work: A. D. Campbell	22
Artificial Fertilizers: Their Nature and Use: R. S. Duncan	25
Why Young Men Should Stay on the Farm: John Campbell	32
Farmers' Club Debate: Specialized Farming *vs.* Mixed Farming	36
Ontario's Agriculture of the Future: W. L. Smith	38
Reply by Prof. G. E. Day	39
Methods of Breeding Beef Cattle: John Campbell	41
What Kind of Cattle to Feed and How to Feed Them:	
Discussion at Preston: Led by Mr. Mader	42
Discussion at Roseville: Led by Mr. Hilborn	44
Discussion at Linwood: Led by John G. Seip	46
Selection and Feeding of Beef Cattle: R. Murphy	49
A Brief Study of Cow Characteristics: George Rice	51
Rearing the Dairy Calf: Clarke Hamilton	54
Feeding and Care of Dairy Cattle: Emerson Cohoon	56
The Management of the Dairy Cow: Wm. Reid	59
The Raising of Fodder for Dairy Cattle: A. E. Calnan	61
Cow Testing Associations: R. S. Hamer	64
Possibilities of Milk Production	67
Stock Breeding: H. G. Reed	70
Desirable Conformation in Draft Horses: J. A. MacLean	71
Principles of Horse Breeding: D. A. McKenzie	76
The Special Purpose Horse is the One that Sells Best: H. G. Reed	77
Care of the Newly Born Foal: H. G. Reed	79
Take Care of the Foal: H. G. Reed	81
Watering and Feeding Horses: J. A. Macdonald	82
Training Colts: W. F. Kydd	84
Roseville Farmers' Club	87
Growing Ducks for Market: M. C. Herner	89
Winter Egg Production: Wesley Howlett	91
Poultry Questions and Answers	93
Co-operation in Marketing Fruit: D. Johnson	94
Management of the Apple Orchard: P. E. Angle	96
Care of the Farm Orchard: W. J. Kerr	101
Law and Gospel Relating to Noxious Weeds: T. G. Raynor	109
The Codling Moth: Lawson Caesar	112
Growing and Improvement of the Corn Crop: A. P. McVannel	116
Silos and Their Construction	121
Stave Silos, 127; Concrete Silos, 131; Steel Silos, 134; Plastered Silos, 137.	
Alfalfa the Greatest of Crops: R. H. Harding	139
Why Underdrains are Valuable: W. H. Day	140
Keep After the Weeds: A. E. Slater	143
The Seed Control Act and its Application: T. G. Raynor	145
The Production of Improved Seed Grain: I. F. Metcalfe	147
Conservation of Soil Moisture: W. C. Good	148
Cultivation and Rotation of Crops: R. M. Young	151
Common Sense in the Cow Stable: G. E. Day	153
Co-operation in Marketing: S. E. Todd	154
Co-operation Piggeries in Hastings County: A. D. McIntosh	157
Telephones for the Farmer: Francis Dagger	158
Beef Rings	168
Wire Worms and White Grubs: C. W. Nash	172

Farmers' Institutes of Ontario, 1909.

To the Hon. Minister of Agriculture:

I have the honor to present herewith the fifteenth annual report of the Superintendent of Farmers' Institutes. This report is published in two volumes: Part I., consisting of papers and addresses bearing upon agricultural matters, and Part II., consisting of lists of meetings, speakers and their subjects, statistics, financial statements, etc.

While the attendance at regular Institute meetings remains about the same from year to year, the number attending short courses in Stock and Seed Judging, Fruit Institutes, Special Poultry meetings, Dairy meetings, etc., has considerably increased. The membership secured at the winter meetings of 1909-10 is considerably in advance of the previous year, and judging from the records at hand, and statements by Institute officers and members, there is a steadily growing interest in all lines of agricultural education.

There has been a marked growth in the formation of local organizations known as Farmers' Clubs. Over one hundred and fifty of these organizations have been organized and are doing active work.

The development in Women's Institutes is most encouraging, not only in the number of organizations and membership (581 societies with a membership of 16,104 and an attendance for the year of 135,922), but in the nature of the work undertaken. In the early years of this society, food topics and methods of work in the household largely occupied the attention of the members. As the years go by, far more attention is paid to health subjects, including sanitation in the home, hygiene, home nursing, a pure water supply, sanitary methods in the production of milk, etc. A great deal has been done lately in the beautifying of home surroundings and some of the more progressive Institutes are using their influence in civic improvement. Sane house furnishing, home management, the relation of the family and individual to the community, school question, etc., are receiving their just attention. There is a greater demand now than ever before for an extension of this work. The appreciation of the work by the women of the Province is indicated in the following quotations: "Each of us is striving to attain the highest position a woman may fill, viz., a good home-maker. To be that we must first be good daughters, sisters, wives and mothers."

"The Institute has brought town and country women together, and each has found in the other good qualities never dreamed of, and the consequence is a mutual feeling of sisterhood between town and country women."

"It has meant to the people of this riding a social unity such as no other organization could have produced. Ladies from all parts of the county meet and feel at home as if they were neighbors."

"I consider the Women's Institutes are doing a greater work in this part of New Ontario than the churches."

"Not least among the advantages appreciated to the full by the Women's Institute members are the opportunities afforded for social intercourse, when the monotony of life on the farm is broken and brightened once a month and the mem-

bers return to their homes with new interests and thoughts to bear them company in a more joyful pursuance of the multifarious duties which are approached with renewed vigor."

Sufficient has been done by Farmers' Clubs during the past year to demonstrate that they will be a permanent feature in agricultural education and advancement, and we beg to repeat that they can be made one of the most effective agencies by a hearty co-operation and unity of purpose on the part of the farmers in the various districts.

Those wishing to get full particulars regarding Farmers' Clubs should make application to the Department for Farmers' Institute Club booklet.

The number of farmers who take advantage of membership in the Institutes to secure the publications sent out by the Department year after year is altogether too small, and we trust that those who are now members will do their part in extending the constituency of the Farmers' Institutes. Ask your neighbors to become members.

We would urge upon every farmer the wisdom of taking one or more of the agricultural papers published in Ontario. Seasonable information comes to the farmer every week through this source, and Departmental reports cannot take the place of them. In this volume we have taken the liberty of quoting from articles which have appeared in the following agricultural papers: *The Farmers' Advocate,* London, Ont.; *The Weekly Sun,* Toronto, Ont.; *Farm and Dairy,* Peterboro', Ont.; *Canadian Farm,* Toronto, Ont. Some of the articles appearing herein have been compiled in this office. Mr. C. F. Bailey, who devotes most of his time in the winter months to Short Course work, has given most valuable assistance in this work. We wish to thank the farmers who have so kindly replied to requests for information regarding Silos, Beef Rings, and The Feeding of Live Stock. These articles, together with the papers received from various sources, will, I trust, be of great value to our Ontario farmers. In the yearly publications sent to Institute members—Agricultural College Report, Farmers' Institute Report, Report of the Live Stock Associations, Dairymen's Associations, Agricultural and Experimental Union, and bulletins—the farmers in all sections of the Province will find much worthy of study and careful consideration.

Let each member of the Institute feel his responsibility in an endeavor to make the local Institute meeting a success. Go prepared to ask questions along the lines indicated by the speaker or speakers. It is only by hearty co-operation that the good work which has been done through the Farmers' Institute may be continued and improved upon.

GEO. A. PUTNAM, *Superintendent.*

Parliament Buildings, Toronto, 1910.

Farmers' Institute of Ontario.

In the fall of 1909 a meeting of a few representative men from the Institutes and Clubs was held in the City of Toronto. The discussions and addresses referred largely to Farmers' Institute Club work, and many of the points brought out are incorporated in the Farmers' Institute Club booklet. Some of the addresses and a portion of the discussion are presented below.

A well-kept Ontario farm-home of moderate size. Attractive farm-homes which compare favorably with the above are to be found in many sections of the Province.

ADDRESS.

HON. J. S. DUFF, MINISTER OF AGRICULTURE FOR ONTARIO.

It is so very pleasing for me to have an opportunity of meeting with you this afternoon, if for nothing else than to be privileged to wish you a pleasant and profitable session in discussion with the various men who are doing the work in which you are individually engaged. We know there is scarcely any line of work—and perhaps this is more applicable to farming than any other line of industry—upon which any two men will have exactly the same ideas. It is through brushing up against one another and hearing these ideas, which have been worked out by individual men with reference to the special work in which they are engaged, that we make progress, and it is due to that fact that we are assembled here to-day. There is no doubt in my mind that you would not be here to-day if you had had the thought that the men with whom you would meet would have the same ideas as yourself. It is sometimes very difficult to get a man, who has lived entirely upon his farm, to think that he can do a thing in a better way. Now we feel and we have always felt that the Farmers' Institutes are doing splendid work along the line of agricultural education, but are assured that there will be even greater success by the establishment of these Farmers' Clubs in affiliation with the Institutes.

This work in which you are engaged is a demonstration of what is, after all, a part of the work which is conducted in connection with the Agricultural College. I was very pleased this afternoon to hear President Creelman say that their whole aim is to run the College in such a way that they will be in touch with the farmers as a whole—not the fancy farmer, not the man with lots of money who wants to farm for the fun of the thing, but the man who must secure a livelihood from his farming operations. That is the work which the College is engaged in, to be in touch with the ordinary farmers, those of us who work year after year in the ordinary way and under ordinary conditions, trying to make an honest living.

ADDRESS.

SUPERINTENDENT GEO. A. PUTNAM, TORONTO.

It is a pleasure again to welcome representatives of the Ontario Farmers' Institutes and Farmers' Institute Clubs to another convention. The first gathering to be called in like manner was held four years ago this fall; and we believe that there will be a repetition at this time of the beneficial results following that gathering. With such a large number of worthy representatives, who have devoted their time and money to the advancement of the interests of the agriculturists of their respective districts and of the Province at large, we cannot but have a profitable meeting.

In my trip through Western Canada and some of the Western States, and in attending the annual meeting of the Farmers' Institute workers for the United States and Canada at Portland, I was particularly struck with the increased interest which is being taken in agricultural education. For the most part, the governments of the Provinces and States are more liberal than ever in voting funds for agricultural education, and a good sign is that the legislators and farmers generally are making it their business to inquire into the methods that are being followed in spending that money and seeing that it is expended wisely in the best interests of the farmers of the Province or State concerned. Many of the States can get all the money they want for agricultural education. Perhaps their legislators believe that no better investment can be made than to instruct the farmers in up-to-date methods in agriculture. I was particularly impressed in noting that the farmers are specializing along definite lines in a great many districts. The farmer to be successful and the district to be successful must, to a certain extent, specialize along one or two lines. I believe that one of the means whereby that end can be attained is through the Institute and the Club.

We have three sources or means whereby educational work is carried on. First, the Agricultural College, and the attitude of the farmers generally, the business people and the legislators towards the Agricultural Colleges indicates that the College has been working along lines which appeal to the farmers and business men of the country. Without the College we cannot hope to have effective agricultural education. The work which is carried on there is, of course, different from the work which is carried on through the Institutes. Definite lines of study are mapped out and the men must be prepared to remain with that course of study for two or three years. You know very well that only a small proportion can do this; others must depend upon the Institutes and short courses held at local points throughout the Province or State. They must depend upon the agricultural press;

they must depend upon the Institute literature, and we believe that the Institute must be a means through which the great bulk of farmers are to get their information bearing upon their work. The agricultural press has done much to place agriculture upon the high standard that we find it to-day, but, as we are interested in Farmers' Institutes, they must form the basis of our deliberations this afternoon.

It is a very great responsibility which rests upon us; and the work in hand, if we live up to our responsibilities, cannot but have a marked beneficial influence upon the agricultural practice of the Province and upon the lives of the tillers of the soil and those dependent upon them. The work of the Institute is to disseminate up-to-date information along agricultural lines and to present the same in such an attractive and impressive manner that the farmer will be induced to adopt it. It is not so much a lack of knowledge on the part of the farmer as to which are the best methods to follow, as it is a disinclination to adopt new methods and give up those which have been followed so long. What can we do then to arouse a greater interest on the part of the farmers who are keeping down the average of production in this fair Province. We have an ever-increasing number of farmers who are producing more bushels of wheat, larger crops of better oats, more tons of roots, better stock, more fruit of superior quality, and more milk per cow, but the difference between the average production and that of the individual farmer who is following up-to-date methods is too great. While agriculture in Ontario has made great strides and visitors from other countries are surprised at the large expanse of well-cultivated farms in Ontario, the fact remains that there is a great field for improvement, both so far as methods of work and business are concerned, and the Institute has a place as important as any in this advancement.

We meet together to-day for the purpose of still further perfecting, or in an attempt to still further perfect, one of the many means furnished by the Department of Agriculture whereby the tiller of the soil may obtain information which will be to his individual benefit and the advancement of the community and the nation. It was not until the Institutes were established that the various other means for agricultural improvement were brought most forcefully to the attention of the farmer. The excellent work of the Agricultural College, both in teaching and experimenting, the necessity for the various stock and other agricultural associations and the value of the agricultural press were brought prominently before the farmers through the Institutes. The Institute has had a very important mission in the past and the change in methods in Ontario agriculture to-day, as compared with twenty-five years ago when the Institutes were begun, have been brought about largely through the dissemination of the information imparted by the Institute lecturer and the literature sent out to Institute members from the Department of Agriculture. You say that in some sections where the advancement of agricultural practice has been most marked the number of farmers who have taken an interest and a direct part in the work of the Institute is comparatively low. We cannot, however, measure the influence of the Institute by the benefits derived by the individual who attends the meetings. The improved methods adopted as a result of the lecture or of the reading of Reports and Bulletins are of advantage not only to the comparatively small number of farmers who receive the information and inspiration direct, but each one who practises improved methods successfully has an uplifting influence on the agriculturists of his district. Do not weary, therefore, in well-doing. The meetings may be small or the manifest interests confined to a few. If, however, you as officers or lecturers, can induce a few in each locality

to become close students of their own business and thus be led to adopt the most profitable methods, you have rendered a valuable service to your fellow farmers and the nation.

The tens of thousands of practical farmers who attend the Institute meetings each season are not the only beneficiaries of the organization, which has been and is doing so much to teach the farmer how to increase his profits and to make his isolation, drudgery and hermit life a thing of the past and to place him in his proper sphere of a man among men.

Nature has been kind indeed in endowing this fair Province of Ontario with soil, climate and other natural resources that make it comparatively easy for the intelligent and aggressive husbandman to turn the same into wealth. True, the *average* profits to the fruitmen, dairymen, stockmen and general farmers of the whole Province are not such as would induce the business men of the city to exchange for the business of farming. We have, however, an increasingly large number of first-class farmers who are making profits, a fact which should not only be encouraging to their fellow farmers but is actually inducing the city residents to look to the farm lands of Ontario as a profitable investment. Do not forget that the increased returns from year to year as a result of intelligence, care and industry applied to your business do not represent the whole profit. There is a material advance in the value of lands thus handled, as well as those adjoining. We have instances of fruit lands doubling in selling price during the past year, the increase being due largely to the results of the application of up-to-date methods on adjoining farms. By the application of improved methods the fruitmen are more independent of weather conditions and the ravages of insect and fungi pests. We may expect to see the price of land in our good fruit districts advance still further. This advance in the selling price of lands maintains wherever the farmers of the community have specialized.

I am not here, however, to give a dissertation upon Ontario agriculture, but rather to review the work of the past few years and submit plans for future work, with a view to having the same discussed by the practical men from different parts of the Province, in order that we may, if possible, arrive at some workable plan whereby the efforts of the Department and the individual farmer may result in a more marked advance along agricultural lines. Briefly then we shall make a few statements regarding the work of the past two or three years and attempt to draw therefrom some lessons which should prove of value to each and all. Let us consider attendance, membership, local assistance, subjects dealt with.

Attendance.—The total attendance during the season of 1908-09 at regular Farmers' Institute meetings was not very encouraging when compared with the totals of some former years. When, however, we come to analyze the statement we find that a greater number of meetings than in any preceding year had to be cancelled and a large number of other meetings were attended by only those who were able to walk to the places of meetings, the roads being impassable for traffic on account of severe snowstorms. Some of the deputations were storm-stayed for a whole week. During the season of favorable weather the attendance compared well with the average of previous years. When we total the attendance at regular Farmers' Institute meetings, special Fruit Institutes and Judging Classes, together with Dairymen's meetings and Women's Institute gatherings, we find that the total is far in excess of any previous year. In the year of the greatest recorded attendance at Farmers' Institute meetings, the total included the ladies and we, therefore, feel justified in including the attendance at both Farmers' and Women's Institute meetings in making our comparisons. However, it is not so much a

matter of numbers in attendance, as the object for which the people come. In former years there was probably a little more attention given to entertainment, the meetings being somewhat of a novelty, and the number of townspeople attending was proportionately greater. The number of practical farmers reached during the past two or three years exceeds the banner seasons of past years. The large number of Ontario farmers, especially the younger men, who have gone to the North-West and the dearth of farm labor during the past few years has made it impossible to secure large audiences at farmers' meetings in many sections.

MEMBERSHIP.—In a word we may state that the membership is slightly below the average of the past eight or ten years but about equals that of a year ago up to the corresponding date. It is not, however, the large membership we seek for so much, as it is that we are anxious to have the members take an active interest in the work and make a study of the literature furnished them by the Department from time to time. With the hundred and seventy-five thousand farmers in this Province, the membership of the Institutes would be away in advance of what it ever has been, did the farmers appreciate to the full the benefits to be derived by a study of the reports and bulletins furnished to members.

LOCAL ASSISTANCE.—It has been urged from time to time that an effort be made on the part of local officers to induce successful farmers in each district to take an active part in the meetings by giving addresses and papers and joining in the discussions. While there has been a tendency to utilize local help in some districts the majority of the Institutes have shown little or no progress along this line. Unless we can adopt some means whereby the farmers will be enabled to discuss their own business in their own way, we cannot hope for the best results.

You will probably gather from the foregoing that we have little encouragement to offer the delegates here assembled. Such is not the case, however. We believe that there never was greater necessity for Farmers' Institutes than at the present time, and there never was a brighter outlook for the carrying on of this work to a successful issue, if we can only secure the hearty co-operation of the officers and the farmers generally. Those who have had charge of agricultural, educational and experimental work in Canada or the United States have learned that it is well for them to keep in close touch with the practical farmer who must depend upon the results of his management and labor for a livelihood. It is only when the professional man who is working along agricultural lines keeps in close touch with the work of the practical farmer and the conditions under which he is laboring that he is able to render the most valuable service. Each may learn from the other. The results already obtained along certain lines in a number of districts are an encouragement for us to recommend very strongly the lines of work which we shall outline. While we would not advise that the number of Institute meetings be reduced or that any particular places be struck from the list, we believe that the time has come when the Department must have some assurance from the farmers in the vicinity of the place of meeting that at least a fair proportion of them will lend their support to the Department and the local officers. It is quite an expense to employ lecturers and pay their expenses to Institute meetings; and the Department must be reasonably sure that some benefit is being derived if assistance is to be continued. We know that some very small meetings, meetings which would be considered a failure if judged from the *attendance* standpoint, have been productive of the greatest good in the community; and it is not that we are aiming at large meetings, but at meetings where we can be reasonably sure that benefit is to accrue to the residents of the district. This is not likely to result, however, unless a fair percentage of

the farmers manifest an interest. We probably have not sufficiently impressed the local directors with the responsibility resting upon them, and we shall be glad to have a free discussion on the part of the delegates here assembled as to the part that the local directors do take and should take in their local meetings.

Farmers' Institute Clubs.—One of the most effective means whereby this local interest can be aroused, and by which the work of the delegates will be most effective and the benefits from the literature most marked, is to form, on the part of the local farmers, a club at which they will have an opportunity of discussing agricultural topics and also using the club for literary and social purposes. We may well gather strength in Farmers' Institute work by following the example set by the Women's Institutes. The progress made by Women's Institutes is, we believe, far in advance of the expectations of even the most sanguine. The growth and success of the work is due, not only to the competent staff of lecturers which have been sent out from time to time, but chiefly to the fact that the responsibility

Half-day Judging Demonstration conducted under the auspices of the Norwood Farmers' Club.

has been thrown largely upon the officers of the local organizations. We have, it is true, offered helpful suggestions and given more or less assistance by way of literature, but, for the most part, the success has been due to the development and utilization of local talent, and this is to be found in each locality. We believe that every farmer, if he is worthy of the name of a farmer, will have information or ideas of interest and value to his fellow farmers of the district. The local Farmers' Institute Club is a channel through which this information may be brought to light. Then, again, the organization of local clubs will do more, we believe, than anything else to bring the young men into the Institute fold. This subject will be discussed fully at a later stage in the proceedings, so it is not in place to enlarge at this time upon methods whereby the club can be made successful. We might impress upon you, however, the necessity for some one or two persons in each locality taking a leading part in the organization work and in the conduct of the society for the first few meetings. I am speaking to men who have been chosen by their fellow farmers

to represent them at this Convention, and each of you should be instrumental in organizing one club at least this fall or winter, and many of you should see several such organizations formed. It is well to lay plans for the formation of several clubs in a section where they will be able to interchange programmes and have occasional joint meetings and social events. Each will help the other and the work of officers and members will be made lighter, while the efficiency of the work will be greater. We have already deplored the lack of local talent; this, however, will not be lacking in any locality where a club has been in existence for a few seasons.

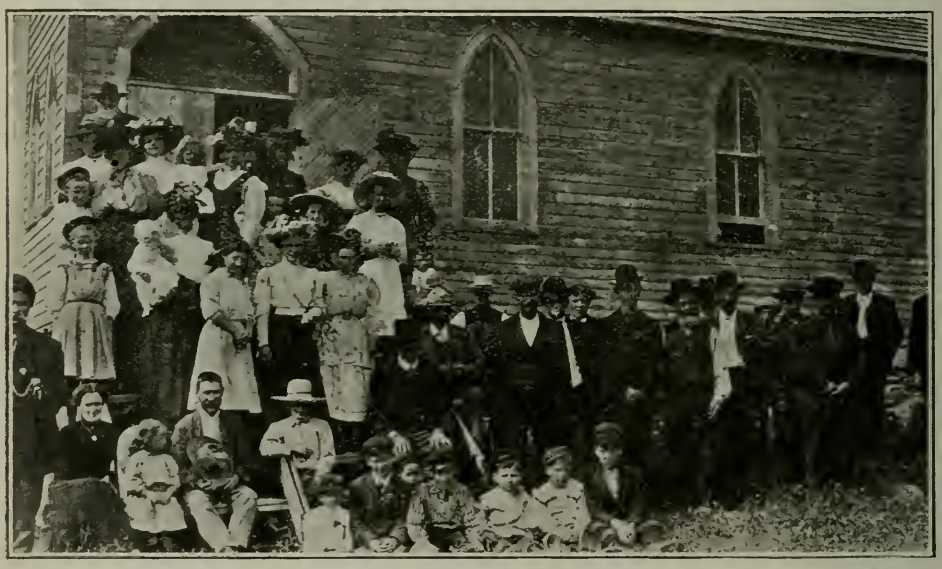
At the recent Convention in Portland I had the pleasure of listening to a number of noted men in the agricultural world, not only Farmers' Institute men, but also college professors and experiment station men. We heard from Prof. Black, Prof. Pearson and others that they believed it is absolutely necessary, if we are going to reach the farmers who are most in need of agricultural education, to have some sort of local organization, and a great many States are making an effort to form these local organizations. As intimated by the Minister of Agriculture, it is absolutely necessary that the farmers exchange ideas and consult together if they are going to get any benefit at all from experiments which the farmers are carrying on, for every up-to-date farmer is, as you know, more or less of an experimenter. If these various experimenters will form local clubs and come together for the purpose of comparing notes and studying the underlying principles; if we supplement that by sending out speakers to address the clubs from time to time, and follow this by short courses, I think we will have a system which will be most efficient.

Special Institutes.—Throughout the whole Province the increased intelligence of the farmers calls for an advance along Institute lines. Where the farmers are students, not only of the literature sent out by the Department and the excellent agricultural papers which we now have, but also of their own operations upon their own farms, they are not likely to be satisfied with a one-day meeting. To the inquiring and intelligent farmer a half-day session, extending over two hours or two hours and a half in the afternoon in most cases, is only an aggravation; and they will not be satisfied, we believe, until they have a means whereby they can discuss their problems at greater length with the delegates sent out by the Department and with their fellow farmers. Nothing in connection with Institutes has proven of greater interest or benefit than the holding of Short Courses, these being confined chiefly to Stock and Seed Judging, Poultry Raising and Fruit Growing. The Stock Judging feature of Special Institutes or Short Courses has been tried, and sufficient has been learned to convince us that additional work of this nature is warranted and the Department is ever ready to support anything and everything which is of direct benefit to the farmers, and you can rest assured that Stock Judging classes or Short Courses will meet with the support of the Department. Special Fruit Institutes or classes were held last winter to the number of fourteen. One or two of these continued for only one day, while the majority extended over three days. Definite programmes were mapped out and the different sessions were devoted to studying the branches of fruit growing. When definite announcements were made to the fruitmen that at a given place, and at a given hour, a certain branch of fruit growing was to be taken up, they came in large numbers, knowing what to expect and prepared to lay their difficulties before the experienced men in attendance and also to offer to those in attendance the benefits of their own experience. As the time advanced, interest and attendance increased, and the fruitmen in the districts concerned were unanimous in their praise of the work accomplished. This has shown us in the Department that it will be wisdom on the part of the

Department and the local officers, so far as possible, to make their work special and make their announcements definite and confine the work of the different sessions as closely as possible to the announced programmes.

You will have gathered that, from a Departmental standpoint, we are of opinion that the future success of the Institutes depends largely upon the organization of local Farmers' Institute Clubs and the extent to which we will be able to arrange for special instructions along definite lines.

It will, I judge, not be in the best interests of this Convention for me to enlarge at this time as to the views of myself and others in the Department regarding the future of Institute work. There are many problems to be brought before this Convention and the greatest good, I think, will result by allowing the delegates to take the Convention from now on as their own. We always have been willing and anxious to get the views of Institute officers and lecturers regarding the work, and, as can be readily understood, it is only by the hearty co-operation of all concerned that the greatest results will follow. Methods of increasing the attendance at In-



Farmers' and Women's Institute meeting at Goulais Bay, near Sault Ste. Marie. The benefits of the Institutes are appreciated to the full in the far northern districts.

stitute meetings, ways of securing membership, the utilization of the literature sent out by the Department, the advertising of meetings, the running of excursions to the Agricultural College and other places, annual meetings, ways of interesting boys and young men in the Institute, co-operation with Women's Institutes, and a number of other questions might be dealt with from the standpoint of the Department, but as we shall be given an opportunity to take part in the discussion, which, we trust, will fall largely upon the delegates, it would be out of place to enlarge further at this time. All I can do is to again welcome you as men to whom we look to make the Institutes a success and to now throw the meeting into your hands. We are fortunate in having with us the Minister of Agriculture and the President of the Ontario Agricultural College, who are in sympathy with all that pertains to the welfare of the farmers. We sincerely hope that the Institute member, the Institute officer and the Institute lecturer will feel free to express his views.

Mr. McKenney, Essex, Ont.: I have had a somewhat varied experience with farmers' clubs, spread over the last two years. I must confess that my ideas regarding the club work have changed a good deal in that time. At first I thought all that was necessary to be done was to go out and organize farmers into farmers' clubs. I started in and found it was not much trouble to organize, but the difficulty was to hold these clubs together and get them to work. We managed to keep three or four of the clubs at work for the past two years. The clubs organized two years ago in Kent County have received very little assistance from the Department; their success has been due almost entirely to the efforts of the members. I would advise that these clubs be formed only in those localities where you can find sufficient interested men to take hold of the work.

Mr. J. F. Fletcher, Valetta: We have had a very successful club organized in our township. The one who started it has since given us some assistance, and I am sure that I can say, if any municipality or community of farmers want to improve along every line, they should organize a farmers' club.

Mr. A. McKenney: This club was organized two years ago and started with a fair membership. These young men, fifteen of them, went into the work for all they were worth, and the membership has spread over two or three townships. You cannot keep up the club for educational purposes only; we have taken up selling corn in a co-operative way. We have 2,000 acres grown under the auspices of the club in that section. We could distribute the seed corn among the farmers' clubs in other parts of the Province.

Mr. F. C. Hart, Galt, Ont.: I have had some experience during the past two years with farmers' clubs in Waterloo County—eleven of them. In establishing these clubs I have organized only in those districts in which I thought they would live, and only one has died. The other clubs are doing excellent work without any help whatever from outside sources; they do not have to be spoon-fed. Several good things have resulted from the formation of these clubs; one of these is along a line which has not yet been mentioned, namely, social. A good many of these clubs have united with the Women's Institutes and have made a great change in the district socially. There has been created a community spirit of which the people are proud; before that the people did not visit and did not "neighbor." By having picnics and social evenings they got together and learned the good qualities of each other. Another thing that the clubs are doing is developing a thoughtfulness among the farmers. The older as well as the younger men come to the meetings, and the experience of the older together with the enthusiasm of the younger men do great things. I know too that some of the young men have certainly appreciated the opportunity given in the club for public speaking. In working out the ideas of the club, and in the work altogether, the members and officers of these clubs are developing an excellent ability which they had not seemed to possess before, and by coming in contact with the men of the community are rubbing off the corners. Another advantage of the club is that they fit the locality. If the club is managed by local officers it gives it a character which belongs to that community only. So successful have the clubs in Waterloo County been, that a number of communities are asking that clubs be established. This helps us to appreciate the work that the clubs are doing.

Mr. W. Mason, Ayr: It has been my privilege during the last year to come in contact with some of the agricultural representatives. I have had the pleasure of meeting Mr. Hart and noting the interest which he takes in the line in which he is engaged. Mr. Hart is our representative in the County of Waterloo, and I am sure he has done excellent work. There never was a time, I think, when the farmers

are taking so much interest in the calling they have chosen as at the present time, and I believe this is due largely to the placing of the agricultural representatives before the people to talk to us and teach us along the lines in which we are engaged. Regarding our club, we have a membership of about sixty, and the club is doing excellent work. Last year the Government put on a short course. The meetings were good. We feel that the club is accomplishing a great deal of good.

Mr. Douglas: Our club was formed about the first week of last October. At that meeting it was suggested that we have a plowing match. This matter was discussed and a committee was appointed to find ways and means of conducting it. So successful was that plowing match and so instructive that we thought we might make it an annual affair. Our club, along with the other four clubs in the township, will have another plowing match about the end of November. Unfortunately we cannot get any help for this purpose from the Government. I think that we are apt to get a little careless in our plowing, at least we feel it so in our neighborhood. Since that first plowing match was held we have found that a great deal more interest is being taken in plowing, which is the basis of good farming. Some of us did not know anything about the good roads movement, so we sent an invitation to Mr. Campbell, the Deputy Minister of Public Works, to address a meeting of our club and other clubs in that section. The result of that meeting was that the feeling in regard to good roads has entirely changed. We also had Mr. Buchanan of the College at one of our meetings. The club meetings have given our men an opportunity of expressing themselves in public and, if I am any judge, we can supply interesting workers for a number of years.

Mr. D. James, Thornhill: In the farmers' club we want two or three men upon whom we can depend at all times and weather to help at the meetings. I can say in reference to the Farmers' Club at Markham, that there are a few men who can always be depended upon in that way, and these men not only tell what they know and tell it in a manner to be understood, but there has been developed a spirit of public speaking in that district which has resulted in giving the young men confidence in talking upon the platform and making themselves understood by the audience. I would not advise confining the meeting to the study of farm subjects. I would take up literary work. Keep in touch with the young people. I would not form a club in every locality, but only in localities where they are likely to be successful, because, when they die, it is an injury to the surrounding clubs. I have two suggestions to make. One is that the Government amend the School Act to give the trustees power to rent the school house with the necessary fuel and light for a nominal sum for Institute meetings. If it is made legal for the trustees to grant this privilege to the clubs for their meetings and for Farmers' Institute meetings, there will not be occasion for objection on the part of some of the trustees, as is sometimes the case. If the Government's attention were drawn to the fact that we have libraries in many of our school sections, we feel that they could be induced to add thereto a number of agricultural books for the benefit of the farmers. I would also like to mention the importance of the question-drawer in connection with the club meetings. A great deal of information is gained in this way that might not be touched upon in the regular addresses given, for, while the addresses may cover the ground of a subject fairly well, it may be that a particular feature upon which a man may wish help may not be touched. I would have a question-drawer at every meeting. We are deeply indebted to the agricultural press, yet it takes time to get help in that way for some of our problems, which sometimes may be emergency cases

Mr. F. R. Mallory, Frankford: There are Farmers' Clubs in the East, as well as in Waterloo County. I organized three clubs in one township which are doing good work. The different localities have different conditions and men and demand different programmes. One club met all winter and seemed to demand evening entertainments. Another club has gone into a business proposition, similar to that spoken of by Mr. McKenney, except that, instead of handling corn, our club is handling the apples of the members, putting them up in a co-operative way and charging ten cents per barrel. We handled 2,500 barrels this year in that way. It takes something more than the social, more than the intellectual, to hold the clubs together. It seems necessary to have some business proposition.

We find that we cannot organize clubs indiscriminately. We are organizing only where our judgment tells us that there are men who are willing to take hold of the work. I believe that a club membership should not cover too large a territory. We find that small sections give better results than we derive from a club which covers a radius of even four miles. The school house in the centre of the school section is a good place to meet. Our clubs intend to hold a grand rally in the township hall, in which all the clubs will take part. The purpose is to have a debate, and I think this will be very instructive. I was pleased to hear Mr. James speak about the school trustees having power to give help to the Farmers' Institutes and the clubs in the way of the use of the school house for Institute and club meetings.

I believe that the clubs will not take the place of the Farmers' Institute meetings, for, while we may have local clubs, we still need the long-distance speakers to come to us.

W. J. Black, President Agricultural College, Winnipeg, Man.: In Manitoba we, too, have the great problems of agricultural education. We are trying to solve these problems and we are anxious to make use of your experience. I have heard of your clubs. We have already heard away in our country of the success which has followed the organization of agricultural clubs to carry on certain work. I am very glad to hear the words of those who have had experience in the work, and to note that you have not only the young men but the older men to take an interest in your club. Twelve years ago, as an Ontario boy, I became identified with the Farmers' Institute work of this Province, and managed to get elected as a vice-president of a county Institute some distance north of here. We find that many of the agricultural organizations to-day are controlled by these same men and the younger men have not been going into the thing as we think they should. Some of the younger men tell us that the older men keep them crowded out, but we find now that a change is coming, that the younger men are coming in as well. We need both. We younger fellows need the experience, we need the direction of those who have gone on before us. We must have the older men to assist us in directing our work. We require, however, the younger men, because, as we grow older, we have less energy—the younger men have the energy and the older men the experience, and these give us what we think is an ideal organization. We have not yet got an organization of this kind known by your name—the Farmers' Clubs—in our Province. Now there is one quality that we find lacking in this agricultural work, and that is enthusiasm. We need that, we think, more than any other single characteristic.

We find a good many men who are practical men in many respects. They seem to understand the theories of agriculture perfectly and know much about the sciences, but we do not always find the farm as we expect to find it after seeing and hearing the men. Now, it may be that class of man is not here, but it exists in other countries.

We are doing one thing which we think is helpful, and that is holding competitions in good farms. Agricultural work in Manitoba, by the way, is all carried on under the auspices of the agricultural societies, that is, our agricultural societies possess the functions which your Institutes possess. We are holding these competitions in good farms, for everything upon the farm, judging from the condition of the machinery to the fences at the back of the farm. Some even follow it closer, and the man who is raising pure-bred stock is trying to excel in his chosen line. We expect to find a little better quality in the young stock than in the dams and sires. These competitions are doing very much good.

I was glad to hear one speaker mention the debate. It is a capital thing—nothing better to get the people out and get them interested. We like a little competition, we like to debate in a friendly way. Another feature mentioned is the banquet. Many of our agricultural societies are arranging to hold at least one banquet in the year. It gets men together and helps to break the community line.

I am glad that you have so much enthusiasm in the work in Ontario, and I would say to the young men to go into these organizations and push the work with all your might. Hold the older fellows there too. While they may not be able to do very much work, they are needed to have the club well balanced.

Mr. Henderson, Wentworth Co.: Three things are necessary in conducting a Farmers' Club. First, you must have enthusiasm, you must have ability, and you must have good officers. Perhaps I may put officers first—officers who will do their duty under all circumstances and conditions, fight against everything and anything that will hurt the club. In our district we have only one Farmers' Institute meeting during the year. Our lady friends are meeting monthly, and they are carrying on their work in a better spirit. When only one meeting is held, we have almost forgotten what took place at this meeting before the next is held, and the enthusiasm dies out. You must have ability. There must be a leader or two in your community, men who are able to give an address or read a paper and also the ability to draw others into a discussion of the topic. Mr. Putnam referred to holding a meeting in every school section. Now in our township that would never do. We could not keep up the enthusiasm in every section, as there is very little hall accommodation, although there are eight or nine different places where good meetings might be held. I do not know that it would serve any purpose to have a library. We have sufficient literature if we only took time to read and digest it.

Mr. A. D. Harkness, Irena: I have to report only one club. Dundas County is noted for the amount of milk it produces per square mile. We have a number of cheese factories, and they are all doing well and all making good cheese. Some of the members of the Farmers' Institute, at the annual meeting last fall, asked for the organization of a Farmers' Club. I wanted to know how many men were there who would agree to attend at least six meetings for two years. About twelve agreed to do this. We organized and have been carrying on a very good work ever since. We advertised our meetings well. We had the printer strike off 200 bills, leaving space to fill in the date. We used a stamp for filling in the date. Twelve of these will advertise a meeting within a radius of four miles—in addition to other places, we post them in the postoffice and the cheese factory. This brings the matter before the people and they are getting interested in our work. We try to have a subject in its proper season. Last spring, in April, we discussed garden work. Mr. Kerr of Ottawa attended this meeting and gave us a very instructive address. As a result of the meeting our committee agreed to give a plant to every member of the club. Through our club we got about $28 worth of plants in a wholesale way, chiefly strawberries and raspberries, and they were distributed among our members.

We also undertook to supply our members with clover seed (we cannot grow our own clover seed down there). I went to our own merchants and told them what we wanted and got quotations from them. The result was that we saved a little, enough to pay our membership fees. Now, about the Farmers' Club taking the place of the Farmers' Institute. I believe rather the club will be a stimulus to our Institute. By holding our meetings monthly we become more interested in our work, and when the Department of Agriculture send us speakers from a distance I believe we are going to turn out in greater numbers. The local literary society has furnished us with all the entertainment we require for the evening. We leave the social part alone in our Farmers' Club.

Mr. H. Grose, Lefroy: Next to Mr. James, I think that we have the oldest farmers' organization. We have had the Grange going for about thirty-five years, and have met every two weeks except during two months in the summer. I think in our meetings we should not only have subjects that are interesting to farmers, but subjects dealing with other matters in order to bring out the young people. It is not hard to keep a club if we get it started in the right way. I believe the Farmers' Clubs will be a stimulus to the Farmers' Institute. You will have no difficulty in having a good Farmers' Institute meeting at those places where there are Farmers' Clubs. I might also say that when the lecturers come to these places they will need to know their subjects pretty well.

Mr. A. Cuppage, Orillia: I have nothing special to say along the line of Farmers' Clubs. I was sent by our club to get information. We hold our club meetings from house to house, and I think it is agreed that we shall adhere to this plan. It has somehow got to be the custom for the person at whose house we meet to give us lunch. The importance of having good officers cannot be overestimated. We have not many good speakers in our locality, and we find it necessary to give notice two or three weeks in advance when a paper or address is desired. The President or Secretary can do very much to help the meetings by supplying questions. We closed our winter meetings by a very successful social. We tried having only the monthly meetings, but I cannot report success, and would think it better not to attempt to carry on the work with monthly meetings only. I am satisfied now that any community that has had experience with a Farmers' Club will be loath to give it up. It has proved to be a good thing and will prove a better thing as we get better organized.

Mr. A. W. VanSickle, Onondaga: I am interested in the farmers' clubs. We have at least one in Brant County. I do not know of any more. It was organized last fall, and was carried on through the winter months successfully. We do not attempt to have meetings during the summer. We find that when April comes we are too busy with practical work to attempt to keep up the interest in the meetings. During the winter the interest was good, and we found that the young men came out well. We sometimes had to use a little strategy, however, in order to attract the young men. We conceived the idea of having a sparrow hunt. We felt that the sparrows were getting rather numerous, also that they were feeding upon the crops rather than upon insects. Between 1,500 and 2,000 were destroyed. At the end of the sparrow hunt we had a banquet, all the men sharing in the expense. I believe the farmers' club is in advance of the Institute, because we can touch upon so many more subjects than in the Institute work. When only one Institute meeting is held in the year we can discuss only one subject. The first meeting held in Onondaga, we asked probably eight of the men to mention some improvement which they were going to make during the year. By that means we brought up eight different subjects for discussion. Underdraining was one of the improve-

ments mentioned, and a good many ideas were given regarding this. Another man was going to undertake to keep an account of what his hogs would cost him until sold. The subject of silos was also discussed at that meeting. In the spring we discussed seed selection and cultivation of the soil, also spraying, etc.

MR. PUTNAM: We have been able to get some suggestions from each other and from the addresses of some of the visitors here, who are not directly connected with the clubs, which will be of value to you in your Institute club work during the coming winter. If, with the advice of Mr. Hart, Mr. McVannel, Mr. McKenney and some of you men who have been successful in forming local clubs, we are able to formulate some more definite lines of work, we shall do so and make definite recommendations so far as possible. You must remember that the work is still in a formative state. It is to be hoped that the whole Institute work will be put upon a more substantial basis than it is at the present time.

I shall refer to a few points that have been brought up. Some person said that it is not well to cover too much territory; I think one said that you should not establish clubs in every school section. In all this Institute Club work you must, of course, consider local conditions; I would say that in those places where you can get even eight or ten interested members to take hold of the work you have the basis for a most effective club. It is not always numbers that mean success. Some of the Institute meetings attended by five or six farmers have done more for progressive agriculture than a meeting of fifty. It is not quantity, but quality, that counts. Some person this afternoon referred to the Institute doing something for the boy upon the farm. I was approached not long since by the Chairman of a Committee of the Y. M. C. A. in the city who is anxious to do something for the farmer's boy who comes to the city, to get in touch with him and see that he comes in contact with those influences which tend to make him a good citizen. My idea would be to get in touch with the farmer's boy before he leaves the farm, to show him what life in the city is and also to show him what life in the country can be made. I believe that if this could be done many of the boys who now go to the city would be willing to remain on the farm and make farming their life work. We find that sometimes the boys who come to the city are ashamed to acknowledge their defeat and to go back to the old farm, although many of them would be glad to do so.

Regarding libraries, I would say that there are circulating libraries in connection with the Department of Education, and we have already arranged with that Department to supply these to the Women's Institutes. One-third of the library consists of books which are of special interest to women as home-makers. Arrangements have been made with the Department of Education to have similar libraries sent to the farmers' clubs and Farmers' Institutes.

MR. J. S. KYLE, N. Winchester: In our club we have a directory for the members. This consists of a case placed in front of one of the stores. In this case we have cards about the size of a post card, and when any member has anything to sell he puts the information upon the card in the case and anyone who wants to purchase such an article knows where to buy it. When the purchase is made the card is taken out. We have found this particularly valuable in the selling of stock and foodstuff.

The matter of wholesale buying by the club entails a good deal of work on the part of the Executive. We appoint a committee to interview the different companies regarding prices on the goods we wish to purchase and to see who will give us the best terms. The man who gets the business of the club gets the business of the community. We have bought both seed and binder twine in this way. We

have had assistance from the Department at Ottawa in the way of lecturers and every farmer was invited to our meetings.

With reference to the Farmers' Institute meetings, I might say that I believe the failure in attendance in some cases is due wholly to the lack of sufficient advertising. Many farmers do not go to certain localities for a long time and sometimes do not know of the meetings. An individual notice means very much for the success of any meeting.

Mr. Putnam: With reference to the purchase of goods by the clubs: I hardly know what to advise, except to state in a general way that, if the club is going to purchase anything in large quantities for the members, they should give the local dealers every opportunity to tender. You cannot live as farmers without your village people and town people. I think a club would do well to consider very carefully before they purchase outside their own locality. By joining together, I believe you can get a substantial reduction from your local merchant, and it is better to pay even a little more to your local merchant than to go outside your own town for goods.

Mr. Harkness: With regard to purchasing clover seed, there was very little difference between the price paid and the price asked by our local seedsman. It is, of course, an advantage to the local merchant to sell a large quantity to the farmers at a slight reduction for cash, because otherwise you know the farmers do not usually pay until their crops have been disposed of. We really made very little profit on our purchases.

Mr. Connell was of opinion the work of farmers' clubs should be purely educational.

Mr. Raynor: The farmers' club is destined to solve a good many problems in the future, and one of them is to fight against weeds. I think if we had more farmers' clubs we could get rid of the thistle. I have thought that the Government could not spend money to better advantage than to send a man along the side lines to teach the farmers regarding weeds, as I believe many do not understand the danger. I would discourage the clubs from going into the wholesale buying of seeds and would advise buying only guaranteed seed. Do not let the five cents enter too largely into our minds when purchasing seed.

SHORT COURSES IN STOCK JUDGING.

During the winter of 1909-10, twenty-five courses in stock and seed judging were held in various sections of the Province, for the most part in localities where District Representatives of the Department of Agriculture are located. No line of agricultural education has appealed more strongly to the farmers, and the lessons learned as to the desirable types of live stock and methods of caring for them as well as in the selection of seed grain and the destruction of weeds, will, we are confidenf, bear marked results. It will be of interest to our members to read the following paper bearing upon this phase of work from the viewpoint of a District Representative of the Department of Agriculture.

SOME PHASES OF SHORT COURSE WORK.

A. D. Campbell, B.S.A., Morrisburg.

The growth of scientific agriculture in any country is dependent upon two important factors, namely, the amount of research work done and the dissemination of the knowledge gained by this research work. Owing to the difficulty in securing men and money, the scientific investigation undertaken in Canada is by no means commensurate with the agricultural resources of the country nor with its agricultural possibilities. Up to a few years ago very little was done, except by the few

Live Stock Judging Class. A very common sight throughout the Province to-day. The animals are placed by the audience, after which the instructor gives his decision and reasons.

men at Guelph, at Ottawa, and at a few experiment stations throughout the Dominion. More recently it has been possible to undertake such work at Truro, N.S., at Macdonald College, Quebec, at Manitoba Agricultural College, and at various experiment stations in different parts of the Dominion. And, as the importance of and need for such study becomes better recognized by our legislators and people generally, greater effort will be made to deal with the current problems. Probably more attention has been given to the disseminating of information of a technical nature than to the research work. For a long time the Farmers' Insti-

tute has occupied a leading place in this respect. Agricultural societies should exist primarily for their educational influence and their usefulness must not be underestimated. The Ontario Agricultural College, in addition to the research work of its professors and the training given its thousands of students, each year furnishes an immense amount of valuable information which is distributed in the form of reports and bulletins issued by the Department of Agriculture. The staff also engages in a limited amount of extension work. But much still remains to be done. The field is so big that as yet only a beginning has been made. One has only to go through almost any section of Ontario to discover the erroneous ideas that exist with regard to the aims of the Department of Agriculture and the lack of interest taken in any of its work. There is this hopeful feature though, that as soon as farmers are convinced the Department has information of value to them they are ready to receive it.

One of the best proofs of the value of the training given at an Agricultural College is the appreciation the students have for that training. But the number of students in actual attendance, compared with the number of young men and women who do not receive it, is so small that some effort to reach a larger percentage of the population of Ontario should be made, and it is hoped, through the instrumentality of the District Representatives, to benefit a greater number.

For a long time the two weeks' Short Course at Guelph has been one of the most popular and valuable courses; indeed, so popular is it with regular four-year students that these men find it to their advantage to "jump" regular lectures in order to attend its sessions. Through the combined efforts of the Provincial Farmers' Institute, the County Farmers' Institutes and the District Representatives, it has been possible to hold throughout the Province Short Courses modelled after the College Course, but shorter in duration. These have proven quite as popular as their forerunners at Guelph, which is evidenced by the large and increased attendance at each session, by the favorable comments made afterwards by men participating, and by the numerous requests now being received for similar courses during the ensuing winter.

The benefits of such courses are many and varied in their nature. There is yet in some sections of Ontario a prejudice against any information which has its inception at an Agricultural College. This is largely due to the fact that the majority of people so prejudiced have had no opportunity of forming any accurate conception of what is undertaken and accomplished at such an institution. These courses, held as they are in the most outlying districts, bring to the very door of the man on the land an example of Agricultural College teaching, and the ratepayer is thus enabled to judge for himself of its character and worth. It is my conviction, after conducting five such, that any thickly-settled community where large assembling places can be secured is an ideal place for one. Since each section of the course is in charge of a specialist from some one of the centres of agricultural learning, the people are thus given an opportunity of meeting, hearing and having in their midst men of the first calibre; men who are in touch with the great agriculturists of the age, and who are grappling with the hardest problems of the agricultural world. Having thus become acquainted, if but for a short time, with men whose writings he has been reading for years, the farmer takes a new interest in him, and afterwards gives more attention to his endeavors and achievements, and is ready to assist if possible and to listen to his teachings. In addition to meeting prominent men, the coming together of farmers in large numbers has a good influence in that it tends to bring them to a realization of the importance of the basic industry, agriculture, and of the immensity of its problems. The pri-

mary object of a Short Course, namely, the disseminating of knowledge of a technical nature, must not be lost sight of. One needs but to go about among thinking practical farmers to realize the large number of problems which stand waiting for solution, and none but the most careful research work will solve them. What any body of intelligent farmers require and appreciate most is specific information.

So far the judging of live stock has been the outstanding feature of Eastern Ontario Short Courses. Many fair to extra good judges experience difficulty in placing classes of live stock, and still greater difficulty in giving reasons for their placing; and the amateur is often at a complete loss even when the task is not a difficult one, and for such a one a practical demonstration on high-class stock is of the greatest possible value. The writer has frequently noticed indifferent audiences quickly aroused to a condition of intense interest as the expert judge slowly,

Short Course in Stock Judging held at Bolton. The raised seats at each side of hall allow a good view of the animals under discussion by all present.

methodically and deliberately outlined the desired type and conformation, and then measured the class of animals before him by that standard, and showed wherein they attained to or fell short of it. Often it is an incentive to nobler endeavor for young men to have the best stock in the community brought before them and criticized, and once a young man has aroused in him an admiration and love for fine animals he has received an inspiration which is sure to bring about good results. We have found that there is not so keen an interest taken in seed judging and selecting as in the judging of stock. This is due to the failure of the average man to realize the importance of good seed. Still after one or two sessions the expert generally succeeds in showing his audience that a large yield of grain is to a very great degree dependent upon the quality of seed used.

The value of a Short Course, held, as it often is, in some small village far remote from any agricultural institution, can best be determined from the fact

that the attendance often increases from a dozen or twenty-five, at the first meeting, to four or five hundred good, practical farmers at the closing session. The agriculturist of to-day has acquired a discriminating taste in matters of this kind. He is thoroughly appreciative only of the best, and it is gratifying to know that the efforts of the Farmers' Institutes and District Representatives are supplying information that is appreciated.

[*Note by Superintendent.*—The above contribution from one of the Department's District Representatives is published with a view to place before the Institute members an unbiased opinion from one who has observed the good results following the holding of Short Courses in Stock and Seed Judging. The farmers of Ontario should either attend the Two Weeks' Course at Guelph or make an effort to secure a course at some local point.]

ARTIFICIAL FERTILIZERS: THEIR NATURE AND USE.

R. S. Duncan, B.S.A., District Representative of the Ontario Department of Agriculture for Durham and Northumberland Counties, Port Hope.

The question of fertilizing the soil as effectively and economically as possible is engaging the attention of the farmer, fruit-grower and market gardener alike. Where the land is cropped year after year certain amounts of plant food are taken from the soil, and, unless this is returned in some form or other the land becomes robbed of its natural fertility and refuses to grow productive crops any longer. A soil is not merely a store-house containing an unlimited supply of plant food to be drawn upon year after year without returning something. Unless it is manured or fertilized it becomes poor or worn-out and will cease to give profitable returns, just as surely as a bank account which is always being drawn upon, and never replenished, will run out. When we say that a soil is rich or fertile we mean that it contains large quantities of available plant food. Persistent cropping will eventually exhaust this plant food and an impoverished soil results.

In ordinary farm practice where the land receives the bulk of the farmyard manure, and, where a judicious rotation of crops is followed, leguminous crops are grown and ploughed under to increase the soil's humus content and nitrogen store, artificial fertilizers may not be so necessary. But, in market gardening, truck farming, or in any system of intensified farming, where special crops are produced, and where a maximum yield at a minimum expenditure is sought, it becomes necessary to supplement the manure produced on the farm.

All plants contain in their composition certain chemical elements, as carbon, nitrogen, water and various minerals. Plants obtain their food partially from the air, by means of their leaves, and partially from the soil by means of their roots. The carbon, the largest constituent of the dry matter of vegetable tissue, is obtained from the carbon dioxide of the atmosphere by means of special cells on the leaf surface; the nitrogen is secured from the soil by all plants and is also obtained from the air by leguminous plants; and the water and mineral requirements, as phosphates, potash, sulphates, calcium, iron and magnesium are drawn from the soil through the root hairs.

Accordingly, for a plant to grow and thrive properly, it must be furnished with an adequate supply of all these elements, which are necessary for the formation of its tissues, each element having a special function or duty to perform in its development. Fortunately, most of these elements, with the exception of potassium, phosphorous, nitrogen and sometimes lime, which particularly concern the farmer, are present in the soil in sufficient quantities for crop production.

These are the elements, then, which generally become first exhausted in soils under continuous cropping, and which, sometimes, may be naturally deficient in a virgin soil. All these essential elements of plant growth are indispensable. They all have their part to play in the nutrition of plants, and no one element can replace another. An excess in the supply of one portion of the food will not compensate for a deficiency of another equally important one.

To have success in the use of artificial manures requires a certain knowledge on the part of the user as to the general influence of the three main plant foods, viz., nitrogen, phosphoric acid and potash, on the crop. Nitrogen, one of the most important and most costly to purchase in the artificial state, is one of the main constituents of protein, the most valuable part of any plant. In the absence of nitrogen the plant makes but little growth. Nitrogen promotes stem and leaf growth, and when present in large quantities has a tendency to prolong the growing period and thus retard maturity. Invariably, a coarse, rank or luxuriant growth of shoots, leaf and stalk indicates an abundance of nitrogen; whereas, a deficiency of nitrogen in the soil is shown by the pale green foliage, sometimes of an unhealthy yellow color. With cereal crops, too much nitrogen will often cause the crop to "lodge," though it may also be due to a lack of potash in the soil which seems to give rigidity or stiffness to the straw. When such crops as potatoes, tomatoes and cereals are to be matured, an oversupply of nitrogen is detrimental; on the other hand, for plants producing fleshy leaves, such as cabbage, lettuce and cauliflower, an abundance of nitrogen tends to promote a strong, vigorous growth with fine crisp texture.

Phosphorous has an important bearing on the development of seeds, and tends to accumulate in the upper parts of the stem and leaves. Phosphates are known to promote fruitfulness and hasten maturity. Phosphoric acid helps to form protein, and indirectly starch, sugar and fat. A poor yield of shrunken grain, accompanied by poorly developed plants, may be attributed to lack of available phosphoric acid.

Potash is the most important ingredient necessary for the promotion of strong growth and is associated with heavy yielding properties. It is fairly well distributed throughout all parts of the plant. Its function is to aid in the formation of carbohydrates, as starches and sugar, and hence is an important ingredient in a fertilizer for potatoes, sugar beets and fruit. It is quite necessary in the building up of new tissue and wood, thus filling out the superstructure of the plant produced by nitrogen. Potash improves the quality and flavor of fruits, and the rich color is largely attributed to the supply of available potash in the soil.

Money is not always wisely invested in fertilizers, simply for the reason that the elements which we term "plant foods" are not applied in the correct proportion. There must be a proper balancing of the three essential plant nutrients in the soil, just as an animal requires a balancing of its food nutrients, if we desire good results. All plants differ materially in their requirements and in their ability to gather their food supply. If we have a superabundance of nitrogen or potash in the soil for a grain crop, but a deficiency of phosphoric acid, the grain crop will be light, as this element influences the grain production. If we apply nitrogen and phosphoric acid, and a lack of potash is found, the grain will have a tendency to lodge, the straw being weak and spindly, and the grain poorly developed and of poor milling or feeding quality. Each element has its own part to perform. Analyses of our soils do not suggest to a certainty the required elements. Clay soils, we know, possess a greater or less amount of potash, yet scientists have found that an application of soluble potash to plants on such soils gave

a more perfect growth and a larger yield. Leguminous crops, such as clovers, beans, peas and vetches, have the faculty of gathering their supply of nitrogen from the atmosphere through the nodules on the plant roots. Hence, for such soils, an artificial supply of nitrogen is quite unnecessary. The turnip crop is a heavy feeder on phosphoric acid; the potato responds liberally to an application of potash. All cereal crops contain a small percentage of nitrogen, though it must be in a soluble form, as they have difficulty in getting it. Barley, for instance, is a shallow feeder and maturing in such a short period it is apparent that the plant food must be in an available form. Root crops, on the other hand, have a much longer period of growth, and will be able to have a greater command of the food used during the summer.

The nature of the soil must, to a great extent, determine the relative amounts of potash, phosphoric acid and nitrogen, to apply to a specific crop on that soil. A heavy clay soil naturally contains an abundance of total potash, but, as stated previously, it is not always in an available form. Sandy soils are noticeably deficient in the plant food elements. Swamp, muck or peaty soils, which consist almost entirely of decayed vegetable matter, are quite rich in nitrogen. The presence of nitrogen causes a rank but weak growth. These soils are invariably sour or acid in nature, formed by the vegetable decomposition. In the application of potash and basic slag, which contains, besides phosphoric acid, some free lime, which counteracts the evil effects of the vegetable acids, the soil is thereby sweetened. Lime will have the same effect.

The question that presents itself to the farmer, market gardener and orchardist is, how can I supply my plants with nitrogen, phosphoric acid and potash in the best forms and at the least expense?

Nitrogenous Fertilizers.

There are a great many sources of nitrogen. Of the purely nitrogenous fertilizers we have nitrate of soda, sulphate of ammonia and cyanamid. Besides this, we have dried blood, tankage and other refuse from the packing houses, which contain varying amounts of nitrogen, besides a small quantity of phosphoric acid.

Nitrate of Soda contains about 15½ per cent. to 16 per cent. nitrogen, and is probably one of the best known sources of nitrogen upon the market. It is found in immense quantities on the West Coast of South America. It is the most soluble of all artificial manures, and hence leaches out of the soil quite readily. For this reason nitrate of soda ought to be sown in several applications, the first being given as the plants appear above ground, and the succeeding ones at intervals of from two to three weeks.

Sulphate of Ammonia contains about 20 per cent. nitrogen, and is chiefly a by-product of gas works. It is obtained from the dry distillation in the manufacture of bone-black, from the distillation of coal in the manufacturing of illuminating gas, and from coal in the manufacture of coke. It is also soluble, though slower in its action than nitrate of soda, because it must first be converted into a nitrate form. In fact all nitrogenous compounds must first be converted into nitrates before the nitrogen can be taken up by plants. In a very wet season sulphate of ammonia is to be preferred to nitrate of soda.

Dried Blood, Tankage, and such refuse from slaughter-houses vary in their nitrogen content from 4 per cent. to 13 per cent. and are much slower acting manures, as they contain their nitrogen in an organic or insoluble form. These materials also contain a small percentage of phosphoric acid.

Calcium Cyanamide, Cyanamid or Lime Nitrogen, a new nitrogenous fertilizer, contains from 14 per cent. to 22 per cent. nitrogen in its commercial form. It is produced by heating calcium carbide (the substance used for producing acetylene gas) in the presence of air from which the oxygen has been removed, the nitrogen combining and forming calcium cyanamide. It is a black powder and reacts very quickly with moisture. Consequently it should not be exposed to the air before applying to the soil, and, being poisonous to plants at first, it should be applied at least ten days before seeding.

There are other sources of nitrogen, such as guano, fish manure, ground leather, horn meal, etc., but their nitrogen content is very small and rather insoluble, hence their value is not very high.

Phosphoric Fertilizers.

Superphosphate or Acid Phosphate, containing 13 per cent. to 18 per cent. available phosphoric acid, is one of the chief sources of phosphoric acid for plant food in commercial fertilizers. It is simply ground rock phosphate treated with sulphuric acid in order to convert the insoluble form to one readily assimilated by plants. This source of phosphoric acid is probably the cheapest, and being quite soluble results can be shown in the season of its application.

Another source of phosphoric acid is *Basic Slag* or *Thomas' Phosphate Powder,* which contains from 15 per cent. to 24 per cent. available phosphoric acid and from 30 per cent. to 40 per cent. lime. This is a heavy, black powder obtained as a by-product in the manufacture of iron. It is produced in large quantities in England and Germany, and used quite extensively in those countries. It should be so finely ground that 80 per cent. of fine meal will pass through the standard sieve of 10,000 meshes per square inch. Basic slag is not so readily available as a plant food, and hence an application very early in the spring or in the fall will give best results.

Other forms of phosphoric acid are: *Bone Meal,* containing about 22 per cent. phosphoric acid; *Dissolved Bone,* which is ground bone treated with acid; and *Bone Flour,* still a finer grade, analyzing 27 per cent. to 30 per cent. phosphoric acid. These forms are rather slow acting in the soil and scarcely any benefits are noticeable the first year of application.

Potassic Fertilizers.

Probably *Wood Ashes* is the oldest form of supplying potash to the soil. They contain such a small percentage of potash, and the unleached hardwood ashes are becoming quite a scarce commodity. Their potash content varies from 3 per cent. to 6 per cent., phosphoric acid 1 per cent. to 2 per cent., and lime from 30 per cent. to 40 per cent. The lime contained in wood ashes gives them an additional value, especially in setting free potash in a clay soil. Leached ashes, however, contain only ½ per cent. of potash and about 1 per cent. of phosphoric acid. Coal ashes are practically of no direct manurial value, though, indirectly, they may open up a heavy soil. Most of all the potash used for fertilizing purposes comes from the Stassfurt Mines in Germany, and may be properly designated as German Potash Salts. The *Muriate of Potash* (chloride of potash), and *Sulphate of Potash* containing 50 per cent. of pure potash, are the two most important potash manures now in use. In both forms the potash is in a readily available form for plants. Other Potash Salts, such as *Kainit,* 12½ per cent.: *Potash Manure Salt,*

20 per cent., and *Sulphate of Potash Magnesia,* 26 per cent., are used quite extensively in Europe, but, owing to their low potash content and the high cost of transport, they are not commonly used in this country.

Indirect Fertilizers.

Lime or *Calcium Carbonate,* and *Gypsum, Land Plaster* or *Sulphate of Lime* are materials which do not in themselves furnish any plant food. They are indirect fertilizers. Their chief functions in the soil are to improve the physical condition, to counteract the harmful effect of an excess of vegetable acids and to liberate plant food in a heavy clay soil. A dressing of 2,000 lbs. per acre of fresh burnt lime to a soil rich in organic matter, or humus, would prove profitable. Lime used every year alone will cause exhaustion of the soil; yet it appears to be highly beneficial when applied occasionally and in conjunction with stable, green or artificial manure. Many farmers seem to have great faith in an application of common salt. It supplies no essential element of plant food, though, indirectly, it may have some value on the mechanical condition of the soil. In some instances it appears to give brightness and stiffness to barley straw, and when applied to the mangel crop it is claimed the yield is increased.

In order that a farmer may use commercial fertilizers intelligently and economically to produce profitable crops, he should know, first, what his soil lacks, or, in other words, must understand the needs of his soil; secondly, he must have a knowledge of the food requirements of the different plants he is growing, and how these requirements are likely to be met with in the soil upon which the crops are grown; and, thirdly, the best forms of fertilizers to apply. The widely differing conditions, both in the growing of and the manner of marketing the crops, makes it obvious that the principles laid down to suit the conditions of the general farmer will not apply to those which the market gardener must encounter.

By a chemical analysis of a soil we may find out the total amounts of the essential elements in the soil, but, to be of a practical value, we ought to know what percentage of these ingredients is available to the plant. A soil may show a high percentage of total potash and phosphoric acid, which might be locked up or held in various combinations unavailable for the plant. To these soils experiments have proven that an artificial application of potash and phosphate increased the yield. The question then naturally arises, how can we ascertain the deficiencies of the soil, the different requirements of the various crops and the best forms of fertilizers to apply? It is true the plants themselves give valuable suggestions. Plants having a coarse, rank growth, with a deep, green color, generally indicate a sufficiency of nitrogen, though the flower and fruit may be imperfectly formed, thus indicating at the same time a lack of potash and phosphoric acid. The only accurate method of determining the lacking constituents is for each farmer to conduct small experiments on his own soil and crops. The time and labor spent in conducting fertilizer tests with different crops on different soils will most assuredly be well paid for in the definite data gained. A fairly complete plan, yet very simple, could be conducted as follows:

Plot 1—Unfertilized.
Plot 2—Complete fertilizer (potash, phosphoric acid and nitrogen).
Plot 3—Without phosphoric acid (potash and nitrogen).
Plot 4—Without nitrogen (potash and phosphoric acid).
Plot 5.—Without potash (phosphoric acid and nitrogen).

The amounts used per acre will vary with the nature of the crop and soil.

The sources of potash, phosphoric acid and nitrogen may be muriate of potash, acid phosphate and nitrate of soda. For experimental purposes the plots may vary in size from 1/20 to ¼ of an acre, and should be as uniform in quality of soil, previous manuring and cropping as possible. Such experiments would lead to fairly definite information, though the character of the season, such as a late, wet spring, or a severe drought, may interfere seriously with the favorable action of the fertilizers applied.

It should be remembered that potash and phosphoric acid are readily fixed or retained in the soil, and unlike nitrogen, as nitrates, are not easily lost through leaching. Thus invariably the mineral or ash constituents will have a beneficial "after effect" on the succeeding crops for at least two years. This fact has been demonstrated to me most conclusively in the Maritime Provinces.

Some reference has been made to the functions of the various plant nutrients and the requirements of certain crops. Emphasis cannot be too strongly laid on the value of farmyard manure for maintaining the fertility of the soil. But we have only a partial return of the elements of plant growth by such an application, as it lacks the constituents which are annually exported in the shape of hay, grain, milk and live stock, and, also, a very considerable loss of the fertilizing ingredients occurs in the manure before applied to the land. It contains a high percentage of nitrogen in proportion to the ash constituents—potash and phosphoric acid—and varies in composition with the age, food and condition of the animal. Stable manure has, however, a valuable physical action in opening up and making more porous a heavy, stiff soil, and also in binding together a sandy soil and making it more retentive of moisture. The large amount of vegetable matter in barnyard manure increases the soil's humus content, and when this decayed vegetable matter is abundant in soils, artificial fertilizers invariably give better results.

Fruit trees and vines are slow growing, perennial occupants of the soil, and, particularly when in a bearing state, should not have an excess of nitrogenous materials, because as nitrogen forces stem and leaf growth this would be produced at the expense of the fruit. Hence nitrate of soda should not be used in an orchard bearing fruit, but where nursery stock is to be forced a stimulating manure as nitrate of soda will give good results. The most progressive orchardists use about 200 lbs. of muriate of potash and 300 lbs. of acid phosphate, bone meal, or basic slag per acre.

Cereals and grasses, which are somewhat similar in habits of growth, have only a fair root system and require nitrogen in an available form to produce stem and leaf growth, though if potash and phosphoric acid be lacking the grain crop usually has a tendency to "lodge." On most soils 100 lbs. of nitrate of soda, 100 lbs. of muriate of potash, and 300 lbs. of acid phosphate will be found sufficient.

For leguminous crops no artificial supply of nitrogen will be needed. A mixture of 100 lbs. of potash and 300 lbs. phosphate has proven effective in increasing the crop.

Root and tuber crops require an abundance of plant food in an available form in order to make their greatest growth. Mangels seem to respond to an application of nitrogen; turnips to phosphoric acid, and potatoes to liberal dressings of potash. It must be remembered, however, that these crops should have all three elements, but on account of their characteristics require certain elements in larger proportions. For roots a mixture of 120 lbs. nitrate of soda, 400 lbs. acid phosphate, and 120 lbs. muriate of potash; for potatoes the same amounts of nitrogen and phosphorous, in addition to 200 lbs. of sulphate of potash, is recommended.

Experience points to the fact that sulphate of potash is the preferable form

in which to apply potash to the potato crop. The muriate form contains salts of chlorine, which hinders the formation of starch, and thereby produces potatoes inferior in quality. Potatoes fertilized with muriate of potash were found to be waxy or soggy in texture—not that dry, mealy condition we like to see. The muriate form when used on tobacco impairs the burning quality of the leaf, and also has been found to lessen the sugar content of sugar beets and grapes.

It is poor economy to purchase ready mixed fertilizers and apply them indiscriminately without any knowledge of the forms of the various elements used in compounding the mixture. The guaranteed analysis is not always a safe guide, as the nitrogen present may be made up from such materials as ground leather, horn, etc., which forms do not give up their nitrogen as readily as the more concentrated and soluble forms previously mentioned. The farmer should bear in mind that the object in buying commercial fertilizers is not to get the greatest bulk for the least amount of money, but to secure as much available potash, phosphoric acid and nitrogen as possible for a given sum. The same amount of plant food in a given mixed fertilizer can be purchased for from 25 per cent. to 50 per cent. cheaper in the high-grade materials. It cannot be too strongly recommended for those using artificial fertilizers to purchase nothing but the separate ingredients —high-grade brands—in the original sacks, and then compound mixtures to suit the requirements of special crops and soils. However, for those buying ready mixed fertilizers a guarantee of the contents of the bag ought to be demanded from the seller, and the materials entering into the composition of the mixture ought also to be known.

The advantage of home-mixing of fertilizers should be quite apparent to the up-to-date farmer, gardener, or fruit grower. Supposing it is required to compound a ton mixture with a guaranteed analysis of 3.2 per cent. nitrogen, 9 per cent. phosphoric acid and 10 per cent. potash, we proceed as follows:

FORMULA No. 1.

2,000 lbs. mixture analyzing	3.2 % nitrogen	=	64 lbs. nitrogen.
2,000 " " "	9 % phosphoric acid	=	180 lbs. phosphoric acid.
2,000 " " "	10 % potash	=	200 lbs. potash.

OR

64 lbs. nitrogen	=	400 lbs. nitrate of soda (16 % nitrogen).
180 lbs. phosphoric acid	=	1,200 lbs. acid phosphate (15 % phosphoric acid).
200 lbs. potash	=	400 lbs. muriate of potash (50 % potash).
444 lbs. plant food	=	2,000 lbs. total mixture.

FORMULA No. 2.

To fill a prescription analyzing only 2 % nitrogen, 5 % phosphoric acid and 3 % potash, using the same sources the result is shown below:

2,000 lbs. mixture analyzing	2 % nitrogen	=	40 lbs. nitrogen.
2,000 " " "	5 % phosphoric acid	=	100 lbs. phosphoric acid.
2,000 " " "	3 % potash	=	60 lbs. potash.

OR

40 lbs. nitrogen	=	250 lbs. nitrate of soda (16 % nitrogen).
100 lbs. phosphoric acid	=	625 lbs. acid phosphate (15 % phosphoric acid).
60 lbs. potash	=	120 lbs. muriate of potash (50 % potash).
		1,005 lbs. make-weight or filler.
200 lbs. plant food	=	2,000 lbs. total mixture.

No. 1 is essentially a high-grade product. The materials used in preparing No. 2 mixture are the same, though, as the percentages are low, over half a ton of make-weight or filler, is used, on which the farmer has to pay the freight, besides the extra cost of handling such useless materials. As farmers study this question of commercial fertilizers the tendency will be towards purchasing brands which are high in plant food; or, better still, they will obtain nothing but the separate ingredients and compound mixtures as required.

The application of fertilizers will be determined largely by the nature of the crop, the soil to be fertilized, the rate of availability of the plant food elements and the climatic conditions. Most of the highly concentrated fertilizers, with the possible exception of nitrate of soda, may be applied early in the spring, either broadcast by hand, or with a fertilizer distributor. When applied to a cultivated crop they should be lightly harrowed in before sowing. If ploughed down they will then be outside the reach of the young plant rootlets. Such materials as basic slag and bone meal, being slowly available, may be expected to give better results if applied in the fall of the year. Potash manures, also, may be given in the fall without fear of loss.

It must be borne in mind that fertilizers cannot and will not take the place of cultivation and good seed. They are not stimulants, but are direct food materials, and, applied judiciously and economically, either to make up the deficiencies of farmyard manure or in specialized intensive farming, good results will follow.

The various farm crops differ widely in their requirements of plant food, in their range of root, period of growth and their ability to gather that which they need; the various soils show different needs; and the same kind of soil may respond differently with the season and treatment. A plant can only do best when all the elements upon which it feeds are presented to it under the most favorable conditions. Hence, the need of good cultivation in conjunction with fertilizers. Each farm must be an experiment station. In conclusion it cannot be too strongly urged that farmers should familiarize themselves with the various fertilizer materials in order to use them economically. Indiscriminately used, they may be a source of great loss.

WHY YOUNG MEN SHOULD STAY ON THE FARM.

By John Campbell, Woodville, Ont.

Why should young men stay on the farm? At first thought the question may appear simple and easily answered; but, judging by the apparent tendency of young men born in the country and reared on the farm to seek some opening to launch out in town or city to earn their living and make their way in life, it may not be so very easy to solve the problem. That the aim is to find an easier way to live, and to secure a competence—or, perhaps, a fortune—is readily discovered in conversation with the shifting crowd.

A Personal Experience.

Such were the attractions to the writer during the latter days at school, in the old log building at the corner of our farm. Life on the farm appeared to be, and certainly was then, exceedingly distasteful, because at the time there was an overabundance of hard work, and not much of anything else plentiful. There was not

then good stock, nor intelligent methods of management, nor the comforts in farm homes so comparatively common now. The necessaries of life were frequently very scarce indeed, and as to luxuries, they were sometimes dreamed of.

A schoolmate, who went clerking in our county town, secured for me a position behind a counter. The news fairly made the future life appear "a thing of beauty and a joy forever." The considerate advice of parents, however, prevailed, and the old farm was given a fair trial. Considerable latitude being allowed, improvement of live stock and different system of tillage were introduced, making a decided change in the aspect of conditions. From that day to this, gratitude to a wise father and mother for their successful persuasions, and the subsequent permission of changes in operations, has been deeply felt. And why? Because in a few short years the advantages, the possibilities and unending pleasures of life on the farm were clearly in sight. It was good to feel the accomplishing of something worth the having, to help in some small measure the uplifting of the standard of agriculture in our excellent country. Now, recalling the boys at the time—some older, others younger—scarcely one who took to trade or business but has dropped largely out of sight, while the great majority of those who stayed with the farm are in comfortable circumstances. The old comparison always holds good, viz., that of those who farm in the Eastern Provinces not more than five per cent. prove failures; while of all other classes in business in the leading cities of America ninety-five per cent. fail some time in their career.

But I hear someone whisper, you got a farm to start with, and so you had it easy-going. The reply is this, that with conscientious parents and a large family it was simply a matter of paying of shares, and supporting parents in a separate home for many years, which in return for a hundred acres of land, badly exhausted by over-cropping, just meant paying for the land in full, in easy payments. Although we have added another hundred acres, by purchase of rough swamp land, having good soil, and expended more than its first cost in clearing and draining, yet the net income from the business has not been, on the average, the past twenty years, less than a thousand dollars annually, besides the paying of all household expenses. It is not necessary to state how much more it has been.

Other Examples.

Looking around, a man is seen with one hand gone. Unfortunate, is the thought which immediately comes to mind, but wait and note the results. Losing it when quite a young man, he toiled away, always in connection with farm work. After a time fifty acres were purchased. That sold, a hundred-acre farm was next secured. As years passed, barns and other outbuildings were built, and an excellent brick home erected, the land brought into a good state of cultivation and the stock greatly improved. Boys growing up, one of them inspected the Western Provinces for an opening, but came back. Soon after another fine hundred acres, on which are good outbuildings and a $3,000 brick house, were purchased, and all is paid for. That has been accomplished by a man starting out in life minus a hand, but with a stout heart and good management. To-day the farms and equipment would total up to $20,000.

Another acquaintance started life as a worker on a farm, married the helper in the home, worked for wages for a time, rented one farm, and then another. The next move was to a two-hundred-acre farm purchased, and later two more farms were added; and lastly, another 100 acres were secured for the oldest son. When he died recently he could be safely rated at $23,000 clear over and above the son's property.

Another worker, starting with the accumulations of a few years' living out, rented a large farm. His large family, mostly boys, needing more room for their energies, the father prospected for a season in the West, with a view, if found to his liking, of moving there with his family. Coming back—appreciating Ontario's conditions more than ever—he bought, two years ago, a fine 400-acre farm in Ontario County. A short time hence and he, with his boys, will be full owners of property worth $25,000 to $30,000.

Another young man in the same county saved his earnings, bought a very snug fifty-acre farm, soon paid for it, and last year bought a farm adjoining of 100 acres, for which he will, while still a young man, have paid in full at the rate he is going. Then his belongings, not putting any value on his smart young lads, or his most helpful better-half, will tally up to $10,000 while in his prime, giving him the full opportunity of enjoying the satisfaction of success.

Meeting an Institute officer in Waterloo County two years ago, he told me of two brothers who made part of their start in life in his employment on the farm. Finding them always steady, trusty fellows, led him to be interested in their welfare. Meeting one of them, it was gathered that mixed farming was their aim from the outset on each of their purchased 150-acre farms. The officer mentioned informed me that, by the brothers' steady application and good management, the mortgages were melting away, one at the rate of $800 and interest, and the other $900 and interest annually.

Just one instance more, out of scores known and heard of. A young man, who worked for years in the neighborhood for others, saved little until married, not in very early manhood. The pair worked away for a few years on a rented farm, doing fairly well, then moved to a larger one of 150 acres. There mixed farming, with the bacon hog as a leader, was carried on. They are now in their prime of life, with a half-grown family, a comfortable home, large barn and stablings, situated on a good hundred acres of land, fully and well stocked, to which they moved two years ago, not owing any person a dollar, and all made practically in a few years on rented lands. The rating now may be put at $10,000 all told.

We must, however, never forget that such successes as the above mentioned were not secured by young men hiring and getting part of their wages in the keep of a driving horse, or sporting a top buggy, or a new suit to be paid in six months or next year.

How to Get a Start.

Never before in Canada's history was it so easy as now for a willing lad of fifteen to make a start in securing capital, with the aim of owning a farm in the future in the Eastern Provinces. Wages paid on the farm are the highest on record, and the work is so largely done by the use of labor-saving machinery and appliances that there is practically no hard manual work as compared with the long ago. It is quite possible for a lad of fifteen, starting out for himself, to live comfortably, so far as clothes go, and have $600 saved when the age of twenty. When twenty-five he may have, if careful, $1,600 to $1,800, to make a good start on a rented farm of 100 to 150 acres, according to the lines of mixed farming taken up.

Within my knowledge is a young man, who, by his steady work for another on the farm, taking a deep interest in the doings, and considerable pride in the successful carrying out of the same, has made at least $7,000 in hard cash; besides, he has travelled enough to see much of the outside world. On the other hand, a schoolmate leaving Ontario for the Canadian West many years ago, with $7,000, a share of his deceased father's property, accumulated on the farm, returned to

visit friends years after. To go back to wife and family, his brother, on the old homestead, had to advance the needful, as the visitor was without funds. It is not to cast any reflections on our great and good Western country mention is made of the instance, but to point out as clearly and strongly as possible, by comparison, that success depends more—immensely more—on the man than on the Province in which operations are carried on.

If the present-day young men of the Eastern Provinces were willing to undergo such hardships, live so sparingly, and be content with shacks for many years, as thousands of those who go west are obliged to put up with, verily many sections in the East now cultivated not half, and that done in a half-hearted and most expensive manner, would soon become Midlothians and Midlands in Canada.

Some Prizes in Agriculture.

Sometimes we hear it said, "Why, just see what a doctor of great skill gets for performing a critical operation; or note the fee a clever lawyer secures for bringing a complicated case to a successful issue!" We hear of a hundred or two hundred dollars being paid the former, and, perhaps, five hundred to the latter—that is, if the costs-taxing officer does not cut it down.

We do not stop to consider that greater possibilities, from a financial standpoint, are open to the skillful young man on the farm of to-day. Who has not heard, but, perhaps, considered little, of the doings in the breeding of stock which results in sales of single animals for hundreds, and at times thousands of dollars. Further, we have seen breeders make, not a hundred or two hundred, but up to a thousand dollars a day, and that in a foreign country, when Canadians—Easterners—have gone across the lines to World's Fairs, and gathered the cream of the magnificent plums offered. What thrills of pleasure and satisfaction go to the heart of the man who is in such close touch with nature and nature's Creator, when he tills the soil, sows the seeds, breeds the stock and feeds and fits to a finish such animals as show to the wide world that here in Canada, particularly Eastern Canada, we have the conditions, and we have the women and the men, who, all together, make up the combination which can produce the nearest perfect animals seen in all the world!

Satisfaction of Progress.

There is also a joy and a gladness in improving fields and farm, increasing their productions, and bringing all up to ideal conditions, which no person shut up, day after day, in office, or warehouse, or shop, or factory, can possibly enjoy from his labors. He who is engaged in the breeding of live stock, having special and definite aims, can live the most fascinating of lives. The striving after perfection in animal life or the vegetable kingdom affords a wide field for the keenest thought and study, and leads the student on and on to realize how much can be and is being done in the line of improvement, by observing and practising along the right methods of procedure.

When to the pleasure of such a life is added another important consideration, that a more certain success can be secured on the well-managed farm than in any other occupation, we find, on summing up, the reason why the young man of to-day should remain on the farm, if peace, pleasure, progress and prosperity are among the desires of his ambition.

We find, at least in Ontario, ten farmers who have retired from active life, while yet strong and sturdy, with sufficient means to end their days in peace and comfort, for each one retired from all other kinds of business and professions combined.

Why, then, should the young man not stay where success is nearly an absolute certainty, where failures are few and far between, where his opportunities are envied by the toilers in the towns, by the occasional well-doer in the city, by the odd millionaire in our land, and seized by many of the British and other lands' aristocracy, as was done, and done well, by our late noble Queen Victoria, and also for many years—past and present—by our greatly-admired and peace-loving King Edward.—Courtesy of *Farmers' Advocate.*

FARMERS' CLUB DEBATE.

"Resolved that Specialized Farming offers Greater Profit than Mixed Farming."

"Resolved that Specialized Farming offers greater Profit than Mixed Farming." The speakers were: Affirmative, Messrs. Jas. Wood, Lawrence Snyder and Jesse A. Witmer; Negative, Messrs. Daniel Ludwig, David Newstead and Moses Wismer.

JAS. WOOD: I consider that the man who specializes will like his work better than the man who follows mixed farming. The mixed farmer is likely to work with some line he does not care much for and as a result he will neglect it.

There is a special market for the man who follows a special line of work. He produces a special article which will be of a better quality and there will be a greater demand for it. This is plainly shown by the fact that when the man who is following mixed farming wants to improve the quality of his stock or his seed he goes to the special man and he will there pay an enhanced price for it.

The specialist can make more use of co-operation in buying and selling than can the mixed farmer. He raises a greater quantity and is able to collect a carload of stock or a shipment of dairy products more readily than can the farmer who does not specialize.

Look at the dairy industry. Ontario exported $13,000,000 worth of cheese last year. That is special farming for you. You will always find a dairy section to be a prosperous one. It is dairying that has made Oxford County what it is.

DANIEL LUDWIG: Experience goes to prove that mixed farming is the best. Any climate is likely to be suited to mixed farming. A specialist who is following stock-raising is almost certain to lose money in a year like the last two when the pastures were all dried up.

A specialist is likely to suffer more from insects and plant diseases, than will the mixed farmer. The man who is specializing in potatoes may easily lose the greater part of his crop because of the potato rot. On the other hand, the mixed farmer would not go very strongly into one crop, and if he does lose one through some cause he will have others to fall back on.

A farmer is likely to have a variety of soils on his farm, some wet and some dry, some suited to one crop and some to another, and it would be more profitable for that farmer to raise a variety of crops than to confine his attention to one crop that will not do well on all his land.

A proper rotation of crops cannot be followed under special farming. When mixed farming is practised the soil is not impoverished as it is in special farming. In the North-West, when wheat is grown year after year the land is soon run out.

LAWRENCE SNYDER: The man who goes to the North-West to take up land will choose a farm to suit his purpose; for instance, if he is going into stock-raising he will choose land that will be best for that industry.

The man who is in the dairy business gets a larger profit per cow than does the man who takes up dairying as a side-line. The special man takes the time to test his cows and then discards his poor ones. The mixed farmer does not bother doing so and as a result he is keeping a number of cows which are not giving him a profit.

The special man raises good pedigreed stock and can command a longer price than can the man who is raising a little of everything. The quality of the butter he produces is better and he can ask a better price.

DAVID NEWSTEAD: I think that the man who is following mixed farming will get more pleasure out of his work than will the specialist, as he has more variety. The labor is more properly distributed and he has employment the year round, which is a big argument in favor of mixed farming.

Then, too, the mixed farmer mixes with a greater variety of people.

JESSE WITMER: I consider that the special man can combat adverse conditions better than can the mixed farmer.

As an example of what can be done by specializing look at the potato industry in New Brunswick. Potatoes from New Brunswick sell twenty cents higher on the Toronto market than do Ontario-grown potatoes, because the New Brunswick growers supply the article demanded.

The special farmer makes a smaller investment for the same profit. Take two farmers, a specialist and a mixed farmer. The mixed farmer buys one hundred acres of land for $10,000. He makes a profit of $1,000 a year. The specialist buys 20 acres for $2,000 and grows potatoes. He should raise 200 bushels per acre, which, when sold at 50c. a bag, will bring him $1,300 and at the same time he does not need any more help and he requires fewer implements.

This same result is to be expected in growing cabbage and celery.

A mixed farmer is a busy man and cannot study. The special man has time to get up his own special subject thoroughly.

MOSES WISMER: There is much more risk in raising special crops than in growing a number. The previous speaker mentioned celery. It is often badly attacked with blight and the whole crop destroyed.

The reason of the shortage in dairy products was because of the dry weather so badly affecting the pastures in the dairy sections.

Agricultural authorities in the West state that the adapting of mixed farming will be the only thing that will save the country.

On a mixed farm we have chickens, sheep, cattle, etc., and we have a revenue coming in all the time.

Mixed farming enriches the land, while many lines of special farming cause, the farms to become run out.

MR. JAS. WOOD, leader of the affirmative, replied.

The judge's decision was given in favor of those arguing for Specialized Farming.

BEEF PRODUCTION AND DAIRYING.

The editor of the *Weekly Sun*, Mr. W. L. SMITH, has contributed the following paper. Some of the beef producers of the Province will, no doubt, take exception to Mr. Smith's conclusions.

In view of the statements made by Mr. Smith, we thought it well to ask Prof. G. E. Day of the Ontario Agricultural College to state his views regarding the relative merits of beef production and dairying. We trust that the statements made by these two men will be found of interest and profit.

A PROPHECY—ONTARIO AGRICULTURE OF THE FUTURE.

W. L. Smith, Toronto.

Within the memory of men still living the chief industry of Prince Edward County has changed from fishing to spring wheat; from wheat to barley; from barley to peas for seed, and from the latter to dairying, fruit and truck for canning factories. Within a much shorter time what had been Niagara grain farms have been transformed into peach, grape and berry plantations. In Muskoka and Parry Sound scattered farmers, who formerly found their market in supplying lumber camps, now find a larger and more profitable outlet in catering to the demands of summer tourists.

All over Ontario changes of a somewhat similar nature are taking place. So great are these changes that if those who passed from the scene forty years ago could return they would not recognize their surroundings and they would be as incapable of at once adapting themselves to the use of the new appliances and the new system as are the rawest recently arrived immigrants. Nor are we yet at the end. Changes are still going on and will continue to go on.

One of the greatest changes will take place along the Ontario shores of the great lakes. Mr. H. W. Dawson, of the Dawson-Elliott Commission Company, a short time since made the prediction that the whole north shore of Lake Ontario from Toronto to Kingston will, inside of ten years, be cut up into small holdings with fruit-growing and poultry production as the chief business of the holders. Those who know the peculiar suitability of the district to apple growing, and who realize what the electric railway about to be built can be made to do in the way of furnishing transportation facilities, will be quite ready to accept the prediction. The Canadian shores of Lake Erie, Lake St. Clair and the lower end of Lake Huron will almost certainly in the near future be lined with an almost continuous fringe of summer colonies made up of people from Buffalo, Cleveland, Detroit and other American cities. The shores of Lake Simcoe will be similarly occupied by people from Toronto. Coupled with this there is going to be an enormous expansion in the permanent population of Ontario cities. Toronto will, within the coming decade, probably in less time, have a population of half a million—ten times what it had in the seventies. Oshawa, Barrie, Collingwood and a score of other present towns will shortly reach city status. The mineral wealth of New Ontario has merely been scratched; we shall, almost before we realize it, find in the mining camps of the north a population equal to that of one of our great cities, and a population wholly dependent on outside sources for food.

Other and greater changes, having as direct a bearing on agricultural conditions in this Province, are going on elsewhere. Argentina a little over twenty years ago contained a few wild cattle and had practically no export meat trade. To-day that South American Republic exports a larger quantity of dressed beef than any other country in the world. And her development in this line has merely begun. Almost the whole country will grow alfalfa and corn and in almost all parts cattle can pasture out the year round. Coupled with this Argentina has the great advantage of water freights from the slaughter-house to the ultimate market. All this spells beef production at the minimum cost.

Australia has been hampered in following Argentina's example by two handicaps: (1) The existence of a large desert area in the centre; (2) distance from England, which has prevented shipment of meat in any but the frozen state. Australia's desert area is about to be transformed into a great pasture lot by means of irrigation, and an improvement in the chilling process will, it is believed, put the Commonwealth in a position to ship her beef in a chilled rather than a

frozen condition. This will mean, in the near future, the development of another great area in which beef can be produced at the minimum cost.

Nor must our own West be overlooked. At present the Western Provinces of Canada ship unfinished, half-wild cattle to Liverpool, at high freight cost, with heavy loss in weight en route, and sell in Liverpool at one to two dollars per cwt., estimated dressed weight, less than the prices that would be realized if the cattle were properly finished. At the same time the West is paying heavy freight rates on coarse or inferior grains, which ought to be used in the finishing process, sent to Ontario. That condition will not continue. The West, like Argentina, will soon have a dressed meat trade; her coarse grains will be used at home in finishing her cattle for that trade, and the saving in freights by exporting dead rather than alive, and by feeding coarse grains instead of selling them, will bring into existence another great area within which beef will be cheaply made.

Still other changes are taking place. Argentina is a wheat grower as well as a producer of beef. Australia is becoming such. In a short time both these countries, while not producing more wheat than the United States, will certainly export more. Indeed, the exports of Argentina are already larger than those of the United States. Russia already surpasses the United States in total production and, with the development of Siberia, if peace remains unbroken, will soon increase her lead. The wheat-growing capacity of our own West has only begun to be realized. In all the areas named wheat is going to be produced in ever-increasing quantities and, if a judicious system of farming is followed, at ever lessening cost.

What is the lesson in all this? The first lesson is that the Ontario farmer should have a broad outlook—that he needs to read more than reports of market prices in Toronto or local towns; that he must realize that the world is commercially one, and govern himself accordingly. The second lesson, which is like unto the first, but with a more immediate application, is that practically all Ontario must follow the example set by the Niagara district and Prince Edward County and make of truck farming—and in this term I include poultrying and dairying—the chief reliance. The day of wheat farming in Ontario is at an end; even profitable beef production is likely to be limited to the production of an exceptionally fine article, and more particularly for winter and early spring markets. For fruit, vegetables, dairy and poultry products, which can be produced here as cheaply as anywhere else in the world, there will be an ever-widening market in our growing cities and summer resorts, in the mining camps of the north, in the West, in England, and a still greater expansion may be looked for in nearby American cities when the steadily increasing cost of living forces our neighbors to lessen the restrictions on the importation of foodstuffs from abroad.

Our fathers would not recognize the Ontario of to-day. The present generation, if it could return, would find still more sweeping changes in the Ontario of to-morrow.

PROF. G E. DAY'S REPLY.

ONTARIO AGRICULTURAL COLLEGE,
GUELPH, CANADA, Sept. 19th, 1910.

DEAR MR. PUTNAM,—I have your favor of the 16th inst., regarding Mr. Smith's article, and while I do not pretend to be a prophet, I might call attention to one or two considerations in connection with the beef industry.

It is beyond human power to forecast the future with any degree of certainty. What may or may not happen in connection with our beef industry in Ontario in the next decade is not within our knowledge. A prominent authority on feeding

problems has stated that as population increases the beef animal will be among the first animals to disappear, for the reason that it is a less economical producer of human food than the dairy animal. It is possible to show that the products of the dairy cow constitute more economical articles of food for the human race than the products of the beef animal. Judging the future from this standpoint alone, one might naturally conclude that the beef animal is doomed to disappear. Fortunately, or unfortunately, as the case may be, man is not governed solely by the question of economy in selecting articles of diet, and it is interesting to note what has happened in some of the older and more densely populated countries in this connection. Take Great Britain, for instance, with a much denser population than any part of America, and we find that the beef animal has not yet disappeared. In spite of its high cost, there is still a large demand for beef, and so far as we can see this demand is likely to continue. It is only reasonable to suppose that a similar state of affairs will exist in this country even when the population has attained a similar density to that of Great Britain, which will be a great many years in the future. In spite of the efforts of vegetarians, there seems to be no appreciable lessening of the demand for meat, and so long as meat is to be had it seems as if this demand would continue. A demand of this kind is almost sure to create a supply, because when there is a scarcity prices soar to a point that makes meat production attractive to the farmer. A farmer who can make nearly as much money from beef production as he can from his dairy cows is likely to be tempted into taking up the former industry, for the reason that it involves very much less labor. So long, therefore, as prices for beef cattle remain high, just so long will there be found farmers willing to produce cattle of this class. During recent years there has been a wonderful shifting from beef production to dairying, and this change in methods is no doubt having its influence upon the price of beef cattle, and may possibly have an influence upon the price of dairy products, though the chances are that the latter will always remain at a remunerative point. Those who have changed from beef production to dairying have made conditions more favorable for those who are still in the beef-producing business, and it would seem as if the law of supply and demand would operate in the future as it has in the past, and that beef production is never likely to die out, though it may be somewhat restricted as compared with the past. The great industrial development in this country is creating a demand, not only for dairy products, but also for beef, and the production of beef during the past few years has apparently fallen behind the demand. Whether the supply will ever become so great as to bring prices back to their old level is something which we do not know, but it looks as if it would take a number of years to glut the market with beef, though there is a possibility that the present high prices for beef may tempt some to change from dairying back into beef production. One thing is certain, that beef must command a very much higher price than it did a few years ago in order to make the business profitable, and the chances are that we may never see as low prices in the future as we have seen in the past, owing to the fact that dairying has been the farmer's safeguard and allowed him a means of escape from unprofitable branches of stock-raising. There need be no antagonism between dairying and beef-making. These two great industries are complementary to one another, and permit the farmer to avoid loss which he might otherwise sustain if only one of these lines of industry were open to him. Judging from the experience of other nations, the business of beef-making is likely to prosper in Ontario for many years to come, and so far as we can see, is never likely to disappear.

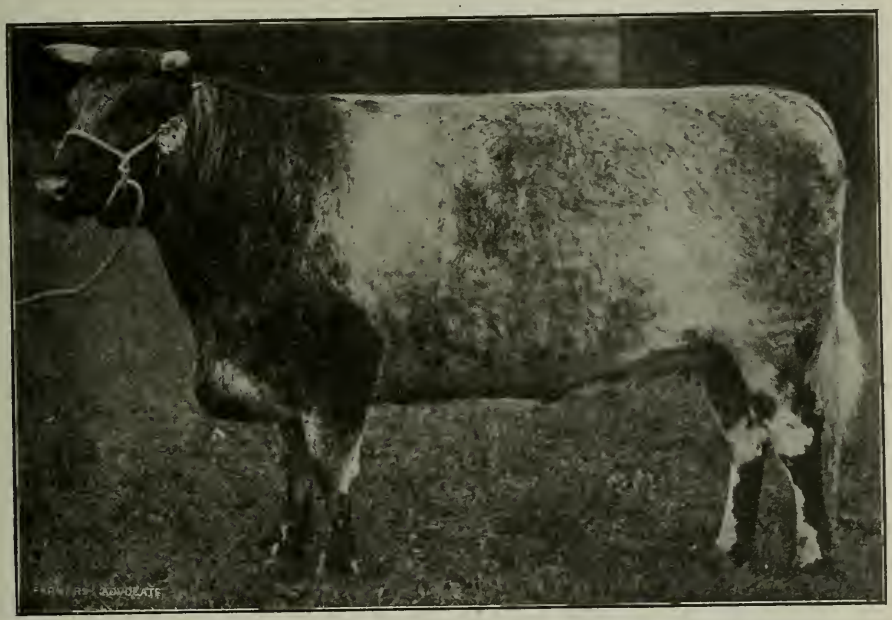
Very truly yours,

G. E. Day.

METHODS OF BREEDING BEEF CATTLE.

JOHN CAMPBELL, WOODVILLE, ONT.

Proper methods of breeding and feeding are necessary in producing animals to furnish beef; yet thousands and tens of thousands are reared throughout Ontario under haphazard methods, and go to market at a loss to the producer. The latter method of production is the easy way in the opinion and practice of many, but it is most difficult to understand where the satisfaction can be found. Altogether apart from the question of profit and loss, there is the feeling of just pride which results from growing and offering for sale good, well-bred and well-fed beef cattle which the buyer is most anxious to get at the highest price, and often is willing to increase his bid when the choice ones are in reach, and so good as to make it impossible for him to turn away, until the limit of price is reached.



A Shorthorn Heifer very typical of the breed. Note the blocky formation, straight top and underline development of hind-quarters, and the evenness of covering throughout.

By what methods can the desired kind be produced? First of all there must be knowledge on the part of the producer as to what a choice beef animal should be in his make-up. A person who cannot with considerable certainty tell a good one from a second or third rater may accidentally breed market toppers; but to make the business anything approaching a regular uniformity of quality, the breeder must have a true ideal in his mind's eye. There is where judging classes in connection with Institute work helps the amateur. It is by comparative study, together with practical experience, that satisfactory results can be obtained.

Never, hitherto, in Ontario's history, has beef-making been on so solid a footing. The outlook for years to come is most promising. Meats are high in value and all points to a continuation of paying prices to the intelligent producer of high class beef cattle. The public year by year demands better quality of food products,

and is willing to pay the difference in price. It really made a person's conscience accuse him in asking the price which was readily obtained for well finished cattle last spring.

How to improve an ordinary herd of females so as to participate in a share of what the markets offer is a timely consideration. A *good bull,* properly bred, is the ready reply. A rich man only can afford to use an inferior one be his females good, bad or indifferent. The right kind of bull can be purchased nowadays at such a price as to enable the buyer to have his use for little or nothing, except the risk in keeping him. That is to say, a useful one can be sold after two or three years' service, if he has been properly cared for, at a price equal to or above the purchase price, while the service fees will pay for his keep. But a man is heard stating, "Why, my cows and heifers are not good enough to justify me in paying seventy-five or a hundred dollars for a bull." Surely any sane man can at once see that it is in the low-grade herd the good bull can be made of greatest service, and bring about the more rapid and greater improvement, all else being equal. With improvement in breeding must go the rearing, so as to waste no time from birth to block by allowing a temporary falling away of flesh or vigor, if the better results are aimed at. "Growing Beef" is a good motto for us all to bear in mind. The writer while attending Institute meetings in recent years found a strong indorsement of the opinion that many a calf's chance for successful growth and finish has been destroyed during the first few months of its life. Separator milk from which the cream is so fully taken is thereby made unnatural food for the youngster's weak stomach. The fat taken away is nature's tonic, and unless a substitute is added it is impossible for the calves to do well at a critical time of life. Flax seed jelly is the best substitute and the cheapest as well.

There is another most important consideration which appears to be overlooked by the large majority of producers of beef cattle. That is the very marked difference in cost of securing gain in weight and flesh in the field compared with that obtained in the stall. No doubt many would shake their heads and look wise, were they told that the increase in the field can be got at one-quarter the cost of stall-feeding. That being so, is it not a short-sighted method to half feed cattle in summer and then endeavor to make up the lack of flesh and finish by heavy feeding in the stall for six months?

We should grow our beef, day by day, making each one count, and determine to get all possible gain in condition and weight by furnishing grass in abundance during summer, supplemented by the rape field in fall. Thereby we can secure the early natural thick-fleshed carcass of such quality as will command the top price.

Putting the whole matter in a compact form would be in some such fashion as this. Have as good females as means will allow. Use the right kind of bull, feed the youngsters so as not to lose the calf flesh, maintain daily growth, make rapid gains in the field, give such a finish as will ensure thick flesh and get to the market at the earliest date, and full values will be easily obtained for cattle of prime quality.

WHAT KIND OF CATTLE TO FEED AND HOW TO FEED THEM.

Discussion at Meeting of Preston Farmers' Club on Dec. 4th, 1908.

Mr. Mader: I am going to tell you briefly just how I feed cattle. The first thing in the fall I select cattle that I think will be good feeders. When I have brought them home I start feeding liberally. I start with six pounds of millfeed a day and continue for about two months. With the millfeed I give turnips, chaff and straw.

Q.—What is millfeed?

A.—The last two years it has been all middlings. Before that it was largely bran. After feeding it for two months I change off to chop composed of two-thirds oats and one-third corn. I feed eight pounds of it a day with ensilage for two months, then ten pounds a day for two months. Feeding this way I got a gain of 375 pounds per head on a carload. I used to feed bran in place of the middlings, but it has gotten too high. I have gotten better results from feeding the millfeed in the fall than when I am finishing them. When you start with the millfeed it makes the hair of the cattle soft and oily, while if you start with heavy chop the hair gets harsh and dry.

Q.—When you are finishing how about feeding ensilage?

A.—I always feed hay for the last seven or eight weeks. A lot of farmers feed fourteen pounds of grain a day. I think that is a mistake.

Q.—Do you feed the grain wet or dry?

A.—I feed it dry. This is the way I am feeding at present. The first thing in the morning I feed chaff and on that I put the millfeed. When they have finished that they are given four average-sized turnips, whole, and after that they get straw. They get the same at noon and at night.

Q.—What weight of cattle are you feeding that to?

A.—They averaged 1,060 pounds three weeks ago. I had them on rape for a month and they averaged sixty pounds gain per head during that month. They had the run of pasture besides the rape.

Q.—How much rape did you have?

A.—I had ten acres.

Q.—Were the cattle troubled with scours?

A.—Hardly any. I had one pair of cattle that gained ninety-five pounds apiece during the month they were on the rape. It pays to buy good cattle. This is the way I figure out the gain in feeding cattle. Suppose I bought 1,000 pound animals at $3.75. They would cost $37.50 apiece. We will say they gained 300 lbs. apiece and that we sold at 5½c., 1,300 at 5½ comes to $71.50. I consider that the millfeed costs 1c. a pound, the oats and other grain 1½c. a pound, and the hay and roots $5 a ton. At this rate there would be a profit per head over the cost of the feed of $7.00. But that is not all. Suppose there were two farmers, each with 100 acres. One of these men feeds cattle. At the end of three years his farm will be yielding 250 bushels more than it did before. The other man sells his grain. At the end of three years his farm will be yielding 250 bushels of grain less than it was at the beginning of the three years. There is a difference of 500 bushels in favor of the man who fed cattle; 500 bushels of oats at 40c. comes to $200.

Mr. Ludwig: I was up to Toronto with Mr. Mader and I saw something of the kind of cattle they want. Good cattle are always in demand, even when the market is bad.

Mr. McNally: Mr. Mader spoke of choosing a steer that is a good feeder. I think a good feeder is one with a big heart girth, one that girths well. I start feeding oat chop, and I give them half a gallon until New Year's, and then one gallon. I think mixed feed is better because they do not tire of it so quickly. I feed turnips all winter.

Q.—When you are feeding ensilage can you feed other rough feed?

A.—You can feed very little other rough feed when you are feeding ensilage.

Q.—What do you consider heavy grain feeding?

A.—About five quarts.

Q.—Do you feed ensilage with chaff?

A.—No.

Q.—Can you get as much gain from a fleshy steer as from a thin one?

A.—The right kind of fleshy steer will gain just as much.

Mr. Ludwig: The winter before last we fed our steers chaff and cut straw from snowfall till the 1st of February. Then we fed oats and corn, one-half of each, all they would eat. Before they were marketed they were fed hay and turnips. They were sold on the 10th of June. When I started feeding they weighed 950 pounds apiece, and they averaged 276 pounds gain. Last winter my steers averaged 1,060 pounds when I put them in. I fed them the way Mr. Mader feeds his. For grain they got a mixture of two parts oats, one part peas and one part barley. I sold them on the 5th of June, and they had gained only 270 pounds apiece. I cannot understand why it was that the steers that were fed the better made the poorer gains.

Q.—Would you feed tied or loose?

Mr. Mader: I feed them loose, if possible. At first the fast eaters will get more than their share, but the slow eaters will learn to eat fast in less than two weeks, but they will all get their proper share.

Mr. Groh: I have been a dairyman of late, but I remember when I fed a bunch of steers that gained two pounds a day. But in feeding those steers I started them with too much grain. Stock feeders talk too much of measures and not enough of pounds. Every feeder should have a scale in the stable and weigh the grain he feeds occasionally. I think there is a big mistake made in feeding cattle a heavy grain ration in the early stages of fattening. You should start on about three pounds and increase that amount by half a pound every week or so. By following this method you will get as much increase in weight with less grain than if you started with the same amount with which you finish off.

ADDRESS AND DISCUSSION AT THE FIRST REGULAR MEETING OF THE ROSEVILLE FARMERS' INSTITUTE CLUB ON DECEMBER 21st, 1909.

Feeding of Beef Cattle.

Mr. Hilborn: I have had considerable experience in feeding cattle. I started at sixteen years of age, when I fed for export with Mr. Hagey. He was one of the best cattle feeders in the county. He always bought the choicest stuff he could get, stabled them about November 1st, and started feeding light. He fed bran, straw and chaff, gradually increasing the amount.

Then I fed for Mr. Clemens for a while, and then I commenced feeding for myself. I always followed a system similar to Mr. Hagey's. Sometimes when bran was not available and oats were plentiful I fed oats altogether. I found that when I fed oats in large quantities they did not do well. Other years I fed more peas and barley; when fed oats alone the cattle seemed restless and uneasy.

One of the greatest points in feeding is to get stock of feeding qualities. I prefer a well-bred beast of any of the beef breeds. I think the Shorthorns come up to any of the breeds as desirable feeders, though some prefer the Angus and Hereford.

One year I fed two pure-bred Shorthorns and they did the best of any I fed that year, making considerably the best gains. This shows the advantage of feeding well-bred cattle.

We have scales in the barn and we always weigh the cattle each month. We always notice that the first month gives considerably the lightest gain, though, of course, we feed lightly then. From five to thirty-five pounds gain is what we usually get for the first month, and after that from fifty to sixty pounds per month is the average. I think it is the change of feed that causes them to do poorly the first month. After they get accustomed to the dry feed they do better.

It is unfortunate that we have no silos here. I got used to feeding ensilage when I was up north, and I like feeding it. It is good feed to keep the cattle filled up. That keeps them quiet and they do better.

In starting to feed in fall I give a quart of chop along with roots. I gradually increase the amount until by the 1st of January they are getting twelve pounds of grain a day, a pound of grain to one hundred pounds of live weight. I think, though, that that is a little too strong.

I once kept a record of the amount of grain I used to finish a bunch of seven short-keep steers. I bought them on March 15th. They weighed in London 8,300 pounds. When they had reached Ayr they had shrunk fifty pounds apiece, and they shrunk seven pounds more before I got them home. We always weigh before we water in the morning, as I think that is the time we get the most reliable weight. On April 3rd, nineteen days, they weighed 8,500 pounds, a gain of thirty pounds apiece. On May 6th they weighed 9,210 pounds, a gain of eighty-seven pounds apiece in thirty-three days, or nearly three pounds a day. On May 30th they were sold. They weighed then 9,330 pounds, which showed a gain of 17½ pounds in thirty-four days. That is a total gain of 134 pounds in 79 days, about 1¾ pounds a day. In that time they had eaten 771 pounds of meal apiece. This was mostly cornmeal, with a little oats in it at the start.

I usully feed for six months and aim to get three hundred pounds gain. Last year I got 297 pounds. I use no tonics at all. I feed roots for the greater part of the winter, with peas, oats and barley. My roots are usually mangels. I see no difference in the feeding value of mangels and turnips. Mangels usually yield better and I prefer to grow them.

Q.—Would you feed ensilage with roots and chaff, or separately?

A.—The easier way is the best way. I put the ensilage in on top of the roots and chaff and let the cattle mix it. I prefer feeding loose. The cattle do just as well and it is a great saving of labor.

Q.—How often do you let your cattle out?

A.—I try to let them out twice a day, and usually leave the shed door open so that they may go in and out as they please. When cattle have full control of the yard and stable they stay out if the weather permits.

This is the way we are feeding now: First thing, chaff, then mangels and then the chop. They are fed loose. If they are dehorned properly they will be quiet. I always consider that dehorning loses a month. It should be done a short time before stabling. If I were tieing the cattle I wouldn't dehorn.

Q.—What weight of mangels do you give at a feed?

A.—I don't know what weight. I give three average sized mangels at a feed, whole.

Q.—What weight of cornmeal did you feed?

A.—Ten pounds a day, which is all they would eat.

Q.—What weight of cattle do you like to feed?

A.—One thousand pounds, two-year-olds.

Mr. Henderson: I shall try to give you some of my experience in cattle-feeding. I consider that cattle-feeding is the least profitable branch of farming. We

usually feed some of our own raising. To get good results we must have good stuff to start with. I have my calves come from September to Christmas, and sell them two years from the following spring. The calf is removed from the cow as soon as dropped. For the first month it is fed whole milk, two quarts twice a day. Then for two weeks it is fed skim-milk mixed with an equal amount of whole milk, and after that skim-milk altogether. He is also fed oats and roots. In the spring he is turned to pasture.

A proper animal to feed must have a good constitution, and to get a beast of good constitution we must start with a sire and dam with good constitutions. A feeding animal must have a good chest and stomach as well as a good back and loin. I consider that what we want in a steer is a broad and short forehead, compact body and short legs. The body should approach a parallelogram in shape. The quality of the flesh is important. It is very desirable to have a mellowness of touch. This can be got with proper feed, as bran, ensilage and roots. Dry feed and heavy grain make the flesh hard.

I buy early in the fall and put them on rape at the end of September. You get the best and cheapest grain in the fall. Rape is better for fattening than oats and peas. We feed no grain for two weeks after the cattle are put in the stable. Then we start with a little bran. After New Year's we feed a mixture of two parts oats, one of barley and one of peas. A heavy meal ration is dangerous to feed. We are feeding oil-cake at present. The prices of other feeds make it profitable. It has a medicinal value, keeping the bowels in good condition.

Q.—What medicine do you use when your cattle go off their feed?

A.—I cut down their feed and give a dose of salts. I sometimes give a dose of iron and gentian also. I find that if they are properly salted and watered there is no trouble with them going off their feed. I give salt every morning, about a tablespoon to a 1,200 pound steer.

Q.—Do you feed two or three times a day?

A.—I have tried both ways and I see no difference.

Q.—Do you prefer to feed loose or tied?

A.—It is claimed that in Scotland the best results are obtained when feeding tied, though most feeders here get best results when feeding loose.

Q.—What do you do for lice on cattle?

A.—I use a mixture of insect powder and cement, dusted on.

When shipping, before starting to travel them, I give them ¾ gallon of chopped oats and some timothy hay. I don't believe in watering them.

Mr. Detweiler: The previous speakers have covered the ground so well that there is nothing left for me to say. One question that has not been mentioned is feeding for the Christmas market. I have done a little at it. I buy early and pasture on rape in September. In October I begin to feed meal night and morning. About November 1st, I stable them and get them off by Christmas. We ought to try and raise our own calves. In buying you are almost sure to get a few culls.

Q.—Do you believe in selling some time ahead?

A.—I prefer not to do so.

DISCUSSION AT LINWOOD FARMERS' CLUB.

"What Kind of Cattle to Feed and How to Feed Them," led by John G. Seip.

Mr. Seip: Practically speaking there are four breeds of cattle fed in Ontario, the Shorthorn, Aberdeen-Angus, Hereford and Galloway. In this district Shorthorn and Shorthorn grades are the most common, although the Angus seem to be

a very desirable breed. I might say here that, although an animal is one of the beef breed, it does not necessarily follow that it will be a desirable animal to feed. You must select from among them, as there are poor as well as good animals. Sometimes an animal with a good pedigree may lack the qualities of a good feeder. I consider that a good feeder should be low set, with a deep chest and full quarters. Usually there is no profit in feeding anything but an animal of a beef breed. Two years ago, at the Winter Fair, Guelph, the prize carcass was that of a Devon steer, and the Devon is considered a general purpose breed, but that animal might not have been profitable to feed, although it produced the kind of carcass demanded.

In selecting stockers and feeders choose those that will put on flesh where the most costly cuts of meat are obtained. Bring them all on the market in a finished condition, as you will not realize nearly as good a price when they are not properly finished. The question of size does not matter so much; it is finish that counts.

At this time of the year or a little earlier you must be very careful not to let them lose flesh before stabling them. A little feed and attention when the grass gets poor will make a big saving later. Give them a few cornstalks, roots or a little hay. The greatest difficulty now, because of the high price of grain, is to get a ration that will give a profit. I believe there is no ration so economic as one containing a large quantity of corn silage. Cattle do very well on corn silage, with a little hay and roots. For grain, begin with about two pounds and increase this amount a little when finishing. The trouble with feeding in this locality is that we have no silage. I believe every feeder should have a silo. If we have to feed grain without silage, clover or alfalfa, the profits will not be large. Be careful not to give too much grain at the start. There is a lot of grain wasted this way. When starting to feed give lots of roughage.

Q.—What kind of grain would you recommend?

A.—That depends a good deal upon the price. When we are feeding alfalfa or clover, oat chop will do very well. Now the heavier grains, barley and peas, are almost out of reach. The present price of linseed meal makes it one of the cheapest foods. It is also to be highly recommended because of its value as a fertilizer.

Q.—Would you feed grain pure or mixed with chaff?

A.—I would prefer to mix it with chaff.

Q.—Would you dampen it?

A.—Yes. And do so twelve hours ahead. Mix in the morning what you will use in the evening. Silage is very useful here.

Q.—Would you advise feeding many mangels?

A.—You may feed a fair amount if you have clover hay. I do not care to feed them alone.

Q.—When cattle first come off the grass should they have dry feed?

A.—It is best to start them on roots and silage. When put on dry feed at once they don't do so well.

Q.—Is it advisable to start dry feed when on the grass?

A.—I don't think it is, but when the grass gets dry and frosted we should feed something to take its place. I feed cornstalks.

Q.—When you take the cattle off the grass do you stable them at once?

A.—If properly sheltered and fed they do as well outside until the snow comes. In fact, they seem to do better outside than in. Some recommend feeding loose. I think it is better both for the feeder and the shipper. They are hardier and when the shipper gets them in hand they stand the shipping better. They make cheaper gains when fed loose.

Q.—Do you prefer feeding turnips or mangels?

A.—I prefer turnips, though Prof. Day says they are of equal feeding value.

A MEMBER: I have seen cattle wintered on nothing but turnips. Turnips don't do well here, the land is too heavy.

Q.—Is it more profitable to feed off a steer at one or two years old?

A.—There is a difference of opinion on this point. I prefer to keep them growing and in good condition and put them on the market when they are two years old.

Q.—Do you think it is cheaper to raise or to buy the cattle you feed?

A.—I think it is cheaper to raise them if you have reasonably good cattle to breed from.

Q.—Would you take a dairy cow and breed her to the best beef sire you could get to get a steer for feeding?

A.—I am afraid it would not be profitable. Around here most of the farmers keep dairy cattle and breed to beef bulls. I think that if you have dairy cattle you should breed to dairy bulls and not try to feed the calves.

Q.—How do you water your cattle? Do you carry it or let them out?

A.—I let them out. I think it does them good to get out. Some feeders keep water always before their cattle.

Q.—Do you feed twice or three times a day?

A.—Feeding twice a day seems to be growing in favor. Gavin Barbour feeds twice a day and waters only once.

A MEMBER: In the north of Scotland some feeders feed as much as a bushel of turnips a day, and give no water, but I think they should have a chance to get water. John Campbell recommends feeding as high as sixty pounds of turnips a day.

A MEMBER: I have seen something of the English method of feeding. There they feed thirty pounds of roots morning and evening, with hay in the morning after the roots. At noon they feed four pounds of nutted oil-cake. Many never feed mangels until after Christmas. They think the mangel undergoes some change and is not nutritious until then.

Q.—Do they feed any other grain with the oil-cake?

A.—Some feed a little ground oats.

Q.—Would you advise the cross-breeding of Angus and Shorthorns for beef production?

MR. SEIP: I would prefer to keep them pure. Nevertheless good results are often obtained from crossing. At the Smithfield Show, for some years past, the champion steer has been a cross.

There is another point that I would like to mention. Mr. Rennie used to recommend that you try to have all your fattening animals of the same size, type and color. It would give the buyer a good impression, and he would be likely to give a better price than if they were of all sizes, types and colors.

A MEMBER: All the neighborhood should go in for the same breed of cattle and then we will get our name up and be able to sell to better advantage.

SELECTION AND FEEDING OF BEEF CATTLE.

R. Murphy, Rosemont, Ont.

As no doubt many of our farmers raise most of the cattle they feed for beef, especially in a district where there is but little attention given to dairying, a word in relation to the foundation of the herd may not be out of place at the outset.

Every cow that will give milk will not produce good feeding stock for beef purposes. However, we can procure cows that will produce profitable feeders and at the same time give a fair supply of milk. There is no denying the fact that we have hundreds, yea, thousands, of cows on our farms for breeding purposes, that can properly be called "Cow Boarders." The difference in price between a good

A good type of Shorthorn Bull.

cow and a poor one is only a few dollars, while the difference in the product means many dollars when the animal is ready for market. If you have a scrub cow, get rid of her at any price. We cannot afford to keep a cow boarder when we can so easily get a cow producer. It is just as easy to raise a good steer as a poor one, and indeed much easier, as we can do it in so much less time.

Again, I find the old custom of using a scrub bull is not extinct. Surely there can be no excuse for this practice at this stage of advancement in agriculture. Because the services of a scrub can be had for 50c. or one dollar, while a good animal would probably cost $2 or $3, the former is selected. But one must remember that not all registered bulls are good stock getters. I have found as much difference in stock from registered bulls as from grades. I know some farmers who breed Shorthorns and find it profitable to register only the choicest animals, selling the rest for beef. Now what is there to prevent the average farmer from pur-

chasing one or more well-bred young cows and following this course? If we are to get the best returns from beef production we must improve the quality of our animals.

If I go out to purchase feeders I don't buy an animal because he is "cheap." A poor steer is not cheap at any price. But I don't reject an animal because he has a pair of horns that are not mates, because he has a thick, heavy tail, or because he is not the right color. However, we must beware of dairy blood. Our buyers usually want to cut in price when they see indications of dairy breeding. We look for a good broad head, a thick shoulder; not the kind that comes to a point like a wedge to split rails with, but wide enough on top to hold your breakfast-plate. Look for plenty of heart room, especially when we are hearing so much about tuberculosis in cattle. This is a very important point in a feeder. The stomach should be large enough to hold a good supply of bulky food. Avoid too fine a bone; have it strong enough to carry all the weight we can put on the animal's carcass. Don't select the narrow-backed animal, but look for a broad, straight back. Go behind and see how wide he is between the pin bones. If he is very narrow don't buy him. He will not be too wide at the best. The quarter is important. Look for something that will give a good cut of meat, as this is a valuable part of the carcass from the butcher's standpoint. Last, but not by any means least, handle him carefully and note the condition of the hide and hair. If it is hard and dry the chances are that he is not thriving well and will not thrive when he goes into the stable. We look for a soft pliable and a soft furry skin on a thrifty animal. The possession or otherwise of these different qualities may determine the side upon which the balance will be found when the animal is put upon the market.

I find a difference of opinion as to which is the better method, dehorning and loose in the stable, or each animal tied separately with their horns intact. My opinion favors the latter, for the following reasons: I have always found that in every lot of feeders they don't all feed alike. Probably out of six head there will not be more than two that require just the same amount of feed. No animal should get more feed at one time than he will clean up. I find in almost every lot one or more "bossy" ones that keep running about from place to place, bunting the weaker ones about and at the same time scattering a part of the mouthful of feed they got at the last place on the way to the next manger.

Have only one man in charge, and he should be a lover of cattle. I have already said all cattle don't feed alike. The feeder requires to know each animal and the amount of feed he will consume at each meal. I have seen, where a new man was put in charge for a few days, enough feed in one manger to feed that beast several days. The feed was in such a sour condition that it was good for nothing and as a result the beast remained off his feed for several days. The cattle should have exercise every day. If only let out occasionally they run about so much that there is a loss rather than a gain in weight. Let them out every day and they will thrive and not show the same tendency to run about. If the weather is at all fine or moderately so, let them get fresh air. Any feeder can make a good steer fat if he has all the feed he wants, without any regard to the cost of such feed, but the man we want is the one who, when feed is high, can put on beef and have a profit on the weight side at marketing time. Hence the farmer must make use of the rough or cheap feed on the farm.

A certain amount of corn for ensilage purposes should be grown on every farm. A silo is important, but I know some farmers who grow a small amount of corn and store it in the barn. During the winter season they cut it with a straw

cutter. But this method should only be adopted as an experiment or until a silo can be constructed. Every farmer should also grow a few acres of roots. I don't know how you can feed cattle without roots, nor do I know any feed more cheaply grown than corn or roots. Alfalfa is also a great producer, but not having so much experience with it I will leave it for someone who is better qualified to recommend its use. Every farmer has a lot of straw that he wants to have turned into money by feeding it on the farm. This straw should be put through a straw cutter and added to the ration. With these three articles of food and a little meal we can begin our feeding operations. We would be the better of some hay, but if it is very high in price we can do without it.

If you have a wife who knows how to prepare a dish that you enjoy when you don't feel hungry, take a hint from her plans and try what you can do to make the feed for your cattle palatable. There is not so much difference between a boy and a big steer in the feeding line. Put down some cut straw in the feed room, then some pulped roots on top to mix with the straw. Add a quantity of ensilage and a little meal. Turn the whole mass over a few times and let stand until the next feeding time. This should be done as soon as possible after each feeding time. No doubt different kinds of roots may be used with good results, but I prefer the sugar beet. One reason for this, we never miss a crop like we sometimes do with turnips. Again the beet is more succulent and aids greatly in moistening the cut straw. Hence the animal finds the ration more palatable. It is not necessary to use a large amount of meal to begin with. One pound per day will insure a good start. This may be increased to three pounds during the second month, but the increase should be made gradually. Suppose I started to feed December 1st, by March 1st I would expect to have my cattle in good shape for forcing, and would add more meal. At the end of the next two months the ration would contain eight or nine pounds of meal. At the start a mixture of oats and barley with a little bran added is a good mixture of meal, but later on I like something stronger. Peas, if not too high in price, make an excellent feed. Corn will do as a substitute, but not so good as the latter. To this mixture of meal about one-third, by weight, of oil-cake may be added with profit during the last two months of feeding. In this way we can put a good quality of beef on the market with about eight hundred pounds of meal and from one hundred and fifty to two hundred pounds of oil-cake for each animal.

A BRIEF STUDY OF COW CHARACTERISTICS.

George Rice, Tillsonburg, Ont.

Animals and birds have habits and traits peculiar to their nature. Some of these can be developed, but we cannot graft on something altogether foreign to their nature. The rooster likes to strut about and crow. (In that respect he is not unlike the human tribe.) The drake likes to go for a quiet swim if there is water to be had. If these would change this procedure it would at least be interesting. Much of the trouble that people make for themselves is because they want to do something not according to what nature intended. This is all too true of dairy cows. It has often been mentioned that some people have better success with one class of stock than with another. This is because they take more interest in that stock and study its traits.

To illustrate, I have been fairly successful with cattle and some other stock, but I never had any success with hens. I never had time to pay much attention to their wants and, although like other people who shave twice a week and wash on the other days and look as pleasant as possible, her ladyship the hen had no use for me. Never an egg will the hen lay in winter, unless she is cared for right.

A Study of Hens.

Having more time at my disposal and possessing a tooth for hen fruit, I have this past winter been following the practice of men that get eggs in winter. I haven't much faith in the methods of those who tell how to get winter eggs but do not get any themselves. In this, as in other things, an ounce of successful practice is worth a ton of theories. Some theories are like a horse with the spring halt. They look all right, but have a decided limp when in action.

After following closely and faithfully the methods of successful winter egg producers, I gathered the fruits (hen fruit) of my endeavor and I find that the

A prize-winning Jersey Heifer. Note the development of udder, the length from hooks to pin bones, and the breedy appearance of the head.

way to the egg basket is via her ladyship's gizzard. It is astonishing what she can put into her gizzard. It is just the same in handling cows for winter milk production. The more closely we study and follow her natural bent, the greater our success.

A Day With a Cow.

Let us follow a cow through a day's work. What shall we give her first? Water? No. She won't drink, that is not her way. She wants feed first. Give her a little hay. She relishes that and whilst you milk she will be happy and contented. Then give her a good feed of ensilage with some meal on it. How she enjoys it! Next course will be some sugar mangels. Surely with all this succulent food she will not want any water. But try her and see how mistaken you are in your theory. She just does want water after she eats her fill and not later, because she wants to get at work on this food and turn it into something that will

eventually fill the milk pail. She cannot get to work until she has all the material, and water is essential. Now perhaps she lies down or it may be she stands up; anyway you think she is at rest. You are quite wrong. Contradictory as it may seem, a cow works the hardest when she is apparently doing nothing. Watch her now whilst she is chewing her cud. She does this not for enjoyment alone; she has all the coarse food to work up into a finer product, the finest product mankind can obtain and a product used by most of us from the cradle to the grave.

"Milk for men, milk for ladies,
Milk that is good for little babies."

Watch her now. We know what she has consumed in food and water, but there is another element necessary to the elaboration of this product we call milk. If the stable is not very warm, and even if it is, we will see, though not quite so plainly, the cow throwing off great clouds of "steam," we will call it. When she has "steam" up she is at full work. How much does she throw off? We are not particular what becomes of it so long as it gets away as it is used up; what is left is of no use to the cow. We are more concerned as to what is to take its place. We cannot see the air she breathes in but we can judge of its volume by what she is expelling, and she must take in as much as that.

The Value of Pure Air.

It makes all the difference in the world whether or not this air is pure, because the purer the air she breathes, the more of these elements it contains that are so necessary to digest the food. It is really through the working of the lungs that the cow derives sustenance from her food. This is a point that cannot be too strongly emphasized. Air to the cow is like the draft to a fire under a boiler. The elements derived from the air make the fire burn better and there is better combustion. At a town waterworks they built a higher and bigger chimney to get a better draft and they were then able to obtain much more heat from the same quantity of coal. The case is even stronger and more important with a cow.

Pure air aids digestion. It oxidizes the blood. It makes the blood purer and circulation more vigorous. It feeds and stimulates the nerves, and good dairy cows have a good deal of "nerve." A cow must have pure air if she is to do the best work she is capable of and be up to her capacity in other respects. A cow breathes in the most air when she is quiet and remasticating her food. She has no air receptacles in which to store up air, like food in her stomach. She cannot retain the air in her lungs for very long, so it is essential that she have good air all the time. There is little use turning a cow out to "get some fresh air" if it is cold. We have got to have the air inside during our winters.

Exercise Unnecessary.

It seems a little strange that a cow more than any other animal can do without exercise. Really she works harder standing and digesting her food than a horse would do plowing. Cows when producing heavily will often sweat while standing perfectly still. It is well known that when cows have to go too far to pasture they do not do so well. A cow carries much weight in various stages of digestion (about 175 lbs.) and she was never intended for a churn.

We see therefore that the essentials to milk production are food, water and air. The last two are quite as important as the first. Essential as they are, they

do not receive the attention that their importance demands. A cow invariably wants drink after eating. What about after the night meal? What are her chances to satisfy the demand of her nature? If she has to go without water for twelve hours or more, then the milk yield must suffer and her whole digestive system be thrown out of gear, as it were.

I only milked three cows this last winter, but I gave them as good care as I could. I was punctual to the minute with the feed and water. If they wanted for anything, all they had to do was to wink and they had it, and as a result they were punctual with the milk, giving me enough to net $20 a month each.

The Difference.

I had to go away on three different occasions. I left a man in charge to attend them. I told him exactly what to feed. Next day, however, the cows had materially decreased in their flow of milk. This happened twice. The third time I was away, on my return I went to the stable at 9 p.m. and gave the cows two pails of water each. The yield was all right the next day. I have not put in the water basins yet, but have seen that the cows get water after they have all the feed they want. The man was in a hurry to get away as soon as the six o'clock bell rang. They would not drink before feeding and did not get a chance after. The result was no water, no milk, not only the next day but for some time after.

The shrinkage of the milk yield as the milk period advances is due more to the lack of care in supplying water and pure air than to the advancement of the lactation period. These cows, though fresh in September, are now giving as much per day as they did in October when I brought them home, and they have not been out of the stable once since the 20th of October. If they got out, they would run a mile, they are feeling so good.—Courtesy of *Farm and Dairy*.

REARING THE DAIRY CALF.

Clarke Hamilton, Dundela, Dundas County.

While cow-testing associations in districts, and the scales and test employed in individual herds, are doing much towards the elimination of the poor or scrub cow, such testing alone cannot reach the fundamental weaknesses of our dairy industry. The practice of weighing the production regularly is an excellent guide in feeding, as well as ascertaining the production of the several individuals of the herd, but the feeding of first importance is the feeding of the young calf during the first year or two of its life, in which such testing cannot be employed as an aid. The negligence on the part of many in rearing their dairy calves properly has been a serious handicap to our dairy industry. If the successful results of the public sales of high-class dairy cattle, being held occasionally, may be accepted as a criterion, the fact is surely evident that dairy farmers realize the need of good dairy cows, and want them badly.

Those who have had experience in rearing high-class dairy stock will agree that there is no economy so false as underfeeding the calf during its first year, if we would have it develop into the most profitable dairy cow. In sections where dairying is carried on extensively, and the milk disposed of through the medium of the cheese factory, the question of rearing the calves properly is a complex one to many who look upon the price paid for milk at the factory as making it

almost prohibitive for calf-feeding, and, accordingly, their calves are turned to pasture the latter part of May to shift for themselves, where they almost invariably develop into the pot-bellied, runty specimens so often seen in autumn, no matter how well they were started in the stable. There is nothing about the dairy business that interferes so seriously with the proper rearing of the young stock as this practice of disposing of the whole milk from the farm, while practically nothing that is of use in feeding the young calves is returned.

This phase of dairying, as practised to-day, is very materially retarding our progress towards better cows and greater financial returns from the industry. Improvement of our dairy stock must come first through breeding, but, when given this vantage ground in our young calves, they being from our best cows and a superior sire, it is very easily and often sacrificed through failure on the part of the owner to properly rear the calf, by liberal feeding and judicious care, into the matured animal, for if the calf be not properly reared, its future usefulness is seriously impaired, let the care and feeding provided later be ever so generous.

If, then, we are to rear them properly, I think the one point that must be borne in mind, regardless of the tempting prices of same, is that the calf must be provided during the earlier stages of its growth with the food nature provided for it, viz., milk—whole at first, and later skimmed; or, if we are not in a position to take the cream off, we may add water to the whole milk as the calf gets older. We have yet to find a satisfactory substitute for skim milk in calf-feeding operations. I do not wish to be understood as claiming everything for skim milk alone, for with calves so fed we would not get best results; it must be supplemented by other feeds as the calf grows older and develops tastes for other feeds, but until the calf is six months old, at least—better older—skim milk in quantity should form the basis of the calf's ration.

I am speaking solely from the standpoint of the dairy farmer, whose object should be to so rear his calves that they will give best results later as dairy cows.

This being so, his object in calf-rearing is somewhat different from that of the beef-raiser who always seeks to develop considerable flesh on the calf, while the dairyman's object should be rather the development of frame, capacity for rough feeds, bone and muscle, along with moderate fleshing, rather than fat, on the dairy calf. Our feeds, then, should be such as will produce such growth—very largely nitrogenous—which class would include skim milk, wheat bran, oil cake, chopped oats and clover hay, or green feed of alfalfa or red clover, with a liberal allowance of roots or silage, or both in season.

If the calf we are attempting to rear is not worthy of liberal feeding of proper feeds, it is not worth rearing. We should select for rearing only such calves as we can feed profitably. I am convinced that the calf should be provided with whole milk two or three times a day for one month after taken from its dam, when it should be gradually weaned to skim milk, which should take about a week or ten days to get it on a full feed of skim milk. While feeding milk at any time, either whole or skimmed, be very careful as regards quantity fed; avoid extremes, making increases or changes very gradually, and always maintain even temperatures. After the calf is ten days old it will begin to nibble at any hay it can reach, and should from this time on be provided with a bunch of clean, bright and wholesome fine clover, with a sprinkling of timothy, twice daily, keeping the supply always fresh and clean. Many, when starting to feed skim milk, make a practice of adding a small amount of some commercial calf feed, or flaxseed, etc., to the milk. We do not approve of this method; we feed milk alone always, as we want our drinking pails clean—scrupulously so—and find them much easier kept

so when meal is not added to the drink. Besides, we think that when the meal is fed dry it is much better than when gulped down with the drink, because the act of chewing incorporates the saliva more efficiently, and so aids digestion, while the calf is also enabled to eat its meal when it has a taste for it, instead of being obliged to swallow it, in order to get its drink.

When on a full feed of skim milk, the calf should be about six weeks old, and will very soon have a taste for a little meal. We teach our calves to eat at first the meal mixture we intend feeding them right along, being a mixture of bran and chopped oats, equal parts, with oil cake of flaxseed. This they seem to like from the start, and it is fed in clean grain boxes after each feed of milk. Along with careful and liberal feeding of the feeds already mentioned, and an abundance of green feed, consisting of clover, oats and peas, or rape, best results can be had only by providing clean, airy and comfortable quarters. Avoid a dark stable and damp beds and foul odors. An excellent idea is to have for litter cut straw or sawdust, and have the damp portion of this removed and replenished after each feeding time.

As regards the matter of stabling the calves intended for dairying purposes the entire summer, I do not contend that it is absolutely necessary. I think the calf suffers no disadvantage if allowed to run out of doors during the latter part of August and early autumn, provided this be accompanied by proper conditions. The feed they had in the stable should be continued in such quantities as they will take along with the pasturage. If they cannot be admitted to one of the sheds or outbuildings as they seek protection from the hot sun and flies or rain, a shelter should be provided. An excellent idea is to provide a movable coop which may be moved from place to place in the field on skids. By hanging a piece of canvas over the entrance, the flies are brushed off as the calf enters, and the interior made dark, conditions very favorable to the comfort of the calf during the heat of the day. You will be surprised at the amount of time they will spend in this shelter, when once provided.

In concluding the first year's feeding, on coming to the stable again, when the weather gets chilly, they should, if properly cared for outside, be in thriving condition, which condition should be maintained throughout the first stabling season by liberal feeding of meal rich in bone and muscle-formation qualities, silage, roots, and good quality of hay. Keep free from vermin, and allow some exercise and abundance of pure air.

To make the most of its time, which is imperative if we intend bringing the heifer into milk at two and a half years of age, or younger, it must suffer no standstill periods; and when once dairymen are brought to a full realization of the importance of this, a big stride will have been accomplished towards better cows and more profitable dairying.—Courtesy of *Farmers' Advocate.*

FEEDING AND CARE OF DAIRY CATTLE.

Emerson Cohoon, Harrietsville, Ont.

My experience with the dairy cow has firmly established in my mind the opinion that unless you furnish the dairy cow with plenty of good feed it would be better for both yourself and the business if you were out of it. I am glad to note such a forward movement, year by year, in the feeding, breeding and care of dairy cattle. Not long since, the majority of farmers thought that if a man fed

his cows coarse grain he was a little out of his mind and if he bought a few tons of bran and some oil cake he was certainly crazy, but the time has now arrived—thanks to the Farmers' Institutes, the success of good dairymen and other things—that the men who feed their cows liberally are known to be on the road to success. Many farmers are beginning to realize that we have in the dairy cow that which requires man's best to bring out that for which she was created, namely, the giving of large quantities of milk. It is almost wonderful what has been accomplished through proper care of the dairy cow; great records have been made and I believe there are cows capable of making just as large records in the hands of men who have not yet been converted to the liberal feeding.

From my first start in dairying I considered that cows were for the purpose of giving milk and was wise enough to know that the more milk they yielded the greater my returns would be. I soon discovered that all cows are not alike; some give more milk than others on the same amount of feed. I then began culling out my herd, replacing the poor ones by the best, which is, I find, a never-ending

A prize-winning Holstein Bull. Note the wonderful development of heart and lung capacity.

process. I have long ago discovered that, to get the best from a cow, you must have her in the pink of condition, for it stands to reason that even a good cow in a poor condition cannot give much milk.

I consider regularity in milking an item of great importance in the care of a dairy cow. We always aim to milk our cows regularly, each milker milking the same cows, taken in order, each time. The same may be said of feeding; we feed regularly and let it be done by one who understands the requirements of each individual cow. The same order should be exercised in handling a large dairy herd as governs our large business concerns.

Prepare the best kind of feed for your cows and by all means have a silo filled with good, well-matured corn. Have plenty silage to feed through winter months and have some reserved for summer when pasture fails. Modern stables, although very convenient for those who can afford them, are not absolutely necessary; but the stable should be well-lighted and ventilated, and the cows well

bedded and in a cleanly condition. I think it a good plan to have water in front of your cows, if possible, and when weather is fine to turn them out of doors for a short time each day. I would endeavor to cure my clover and alfalfa hay so that the quality would be *good hay* that my cows would relish. I feed my cows all the grain necessary to keep them up to their full flow of milk, varying the amount as judgment dictates, among the different cows, according to the amount of milk they are producing or the time they have been milking. I feed oat chop, bran, oil cake, gluten meal, mixed in varying quantities, and roots, ensilage and clover hay. I esteem it a good plan to weigh the milk from each cow, and immediately a shrinkage is noted ascertain the reason and apply the remedy. If in summer it may result from shortage of pasture, then make a change or add to their grain or ensilage. I see that my cows have plenty of salt; they are salted every day in the stable and in the winter a little is put in each feed.

I believe in being quiet and gentle with the cow and in acquainting the hired man with the fact that we keep our cows for business and that if they are ill-used our profit will be small.

It seems natural that the more milk a cow gives the more one thinks of her and the more care she will receive. I think there is a great deal in the early handling of stock that governs to a great extent in after years. If the calf grows up in a common haphazard way until she reaches the lactation period, it will not make the same producer as though it were fed in a manner befitting the work it has to perform. I think a calf should be given a fair start; give it whole milk for three weeks, then gradually replace this with skimmed milk and flaxseed or oil cake, teaching it to eat a little bran and oats as well as some ensilage and roots. It is well to keep some good clover hay in reach and it is wonderful how quickly young calves will begin to eat hay. I like to see them consume lots of this kind of feed. They should not become fat, but should be kept in a thrifty condition, developing great capacity for feed. I feed a little oats and bran all through the first year until they go on grass the second year, then they can do without it until stabled the second winter. I let them eat all the rough feed possible, giving them a little ensilage and some roots to give growth and have them freshen at two and one half years. Then you have a good, strong heifer, capable of doing business. I try to be careful that the heifer is not fed strong feed before and after lactation to fever them. I sometimes give a dose of salts before and after this period, and try to be careful in milking so as to have quiet, gentle cows. I like to handle and be around my young stuff as much as possible, for this makes them gentler as cows, and I owe to this handling the fact that I can sit down and milk for the first time a great many fiery heifers as though they were old cows. As soon as the swelling and fever is out of the udder, I commence to feed some bran and chop, increasing gradually until I reach a full feed, which is kept up as much as necessary until they dry up. The heifer should be milked quite a long period to teach her to be persistent as well as a heavy producer. A heifer that freshens in the fall I would milk, say fifteen months, having her freshen a year from the next spring.

I have always bred and fed with production in view, and the results obtained have given me stronger faith than ever in the liberality of feeding the dairy cow with good judgment and care.

THE MANAGEMENT OF THE DAIRY COW.

William Reid, Lambton County, Ont.

Careful management of the dairy cow is always rewarded. This may be disputed. It will be endorsed by those who understand the cow. Were one to judge our average dairy farmer by the production of the average dairy cow and compare them with our more progressive dairymen and the records of their cows it would be plainly evident that dairy farmers generally require more light and more information regarding the management of cows. Such is warrant enough for what follows.

In order to build up a dairy herd it is important that the dairy farmer should know a dairy cow when he sees one. If capital permit, it is well to purchase, or breed, only pure bred stock. There are a few very important points to be looked for in buying a cow. First look to the breed. In selecting the breed we must be governed by various circumstances. If the milk is to be sold for cheese-making we should recommend the Holstein or the Ayrshire; for butter making, the Jersey or the Guernsey. Should one be unable to purchase pure bred stock, it is possible to have a very good herd composed of grades. There are individual grade cows equally as good as any pure breds, as regards milking qualities.

When buying a cow it is advisable to buy a young animal. Be careful that she is in good, healthy, thrifty condition. A healthy cow has always a sort of dew on her nose, chews her cud pleasingly, and has a nice fine coat. The age of a cow is often taken from the rings on the horns. These are not a sure guide. The teeth furnish the most reliable test. Judging of age by the teeth can only be done by one who is skilled in this respect.

Often we hear of buyers asking for a guarantee that the cow is in calf. It is a very serious matter for one to give such a guarantee, though the seller often gives a guarantee rather than lose a sale. As a matter of fact, a guarantee is not of much account at the best.

Having selected cows to the best of our knowledge, we must next look to providing suitable stabling. Our stabling is one of the weakest points in dairy farms to-day. The great majority of cow stables are in a very unsanitary condition, although, in recent years, a noticeable improvement has been made in this respect. Undoubtedly there will be more improvement in the near future since dairy farmers that sell their milk are under sanitary inspection.

Light, ventilation, and thorough drainage, are the three most important points to be observed in the cow stable. The building should be strongly built, and be ventilated in such a way as to maintain an even temperature and pure air in the stable at all times.

The floors should be well laid, and tight, to prevent soakage. For a cheap, durable floor, cement is recommended. Wooden floors should have no place in the cow stable of to-day.

Dairy cows, to give profitable returns, require to be well bred, well fed, and well managed. High feeding is costly to be sure, but the way to get a maximum profit is to feed the cows to their full capacity. If one wishes to sell a cow or any other stock, they must be in good condition to command the best price. A cow may be well bred, but no buyer will pay a high price for her if she is not in good condition, however good her milking qualities may be. Well fed cows are the best milkers; they produce healthier calves and are more able to withstand diseases than are cows which are poorly cared for. There are so many advantages

in favor of the cow well cared for that it is astonishing that so many farmers adopt any other plan of management.

What a cow should be fed on will depend entirely on circumstances. All, however, should aim at the highest results. The best results can be got only by careful weighing of the milk, morning and evening, and the use of the Babcock test. They furnish a sure measure of what a cow is doing. Whether or not a cow is paying her way can be determined by means of these.

The best time to have cows calve depends somewhat on the use that is to be made of the milk. If the milk is for cheese-making it is preferable to have the cows calve in the spring, as they will then give the greatest flow of milk during the cheese season, which extends from April to September or October. If for butter-making that is carried on the year round then it is advisable to have the cows freshen in the fall. In most cases it will be found advantageous to have cows freshen in autumn. They then milk well in the winter and when turned to grass their flow increases and they may be said to have a second freshening. The largest returns will be secured from cows calving in the fall. Then, too, the calves can be raised during the winter on skim milk and be turned out in fine condition in the spring. In this way they get a good start on the early pasture before flies come. The majority of our most progressive dairymen raise their calves in this way. They claim that their calves are just about one year ahead of what they would be were they dropped in the spring. To a large extent their assertion is true. Cows calving in the fall are fed well throughout the winter to keep up their production and are thus in much better condition in the spring than cows bred to freshen in the spring. Winter is the best time for butter-making. We can then get a better quality of butter and a better price for it than we can in the summer.

Milking should at all times be done regularly. In regularity lies much of the secret of profitable cows. Cows are very sensitive, and look to being milked, as they look to being fed. If the cow is neither fed nor milked regularly, we need not expect to look for large returns. Feed which would likely contaminate the milk with undesirable odors should never be fed before or while milking. Milking should be proceeded with and finished quickly. Milk with dry hands. Be careful to wipe all parts of the udder before milking with a damp cloth to prevent any loose dirt from falling into the pail during milking. It is a common plan to dip the hands into the milk at intervals during milking. This is a most filthy practice. It should be immediately and everywhere condemned. Cows are often milked in the barnyard in the summer. This practice is not to be recommended. It is far nicer for both the animal and the milker to be in a well-kept and properly ventilated stable.

The cow must have free access to good, clean water at all times, summer and winter. At a trifling cost the water can be put into the stable, either in a trough in front of the cows, or in individual pans or basins. Milk cows should have an abundance of salt. Salt aids digestion and keeps up the flow of milk. It also induces the cow to drink more water, which is an advantage.

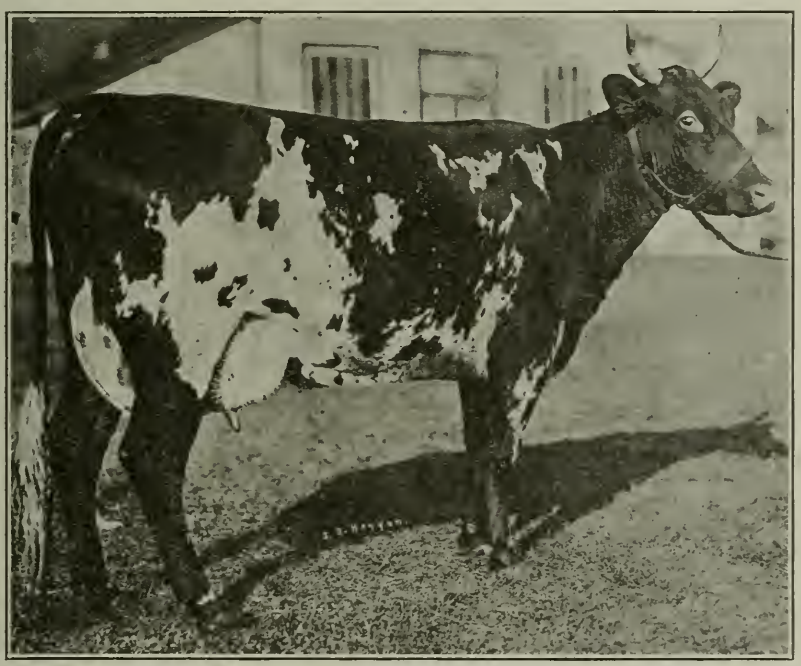
Records of the milk, of the food, the dates of service and of calving and the age of cows should be kept. These may be hung in the milkhouse beside the scales used for weighing the milk.

The diseases of the cow are not few. We should ever be on the alert for their first appearance. Abortion is the most costly of all. This disease in one form is contagious. Every effort must be given to stop its progress when once it is noticed in a herd.—Courtesy of *Farm and Dairy.*

THE RAISING OF FODDER FOR DAIRY CATTLE.

A. E. Calnan, Allisonville.

The profits to be gained from the dairy industry depend very largely upon the quantity, quality and cheapness of fodder. The great bulk of this food must always be produced by the dairyman himself. Therefore, "The raising of fodder for dairy cattle" is to the dairyman a very important question. It embraces the whole series of farm operations from the preparations of the soil to the harvesting and storing of the matured crops. The true dairy farmer plans all his farm operations to the end that his barns and bins may be filled with an abundance of feed, and that each succeeding year will find his farm capable of producing more and more fodder, of better quality and greater value, thus sustaining a large herd



Ayrshire Cow. This heifer won first and sweepstakes at the Toronto National Exhibition, 1910.

of dairy cattle. To accomplish this the dairyman should study the value of drainage of the best methods of soil cultivation, of the best system of crop rotation to increase soil fertility and subdue the weeds, of the most productive kinds and varieties of grain to sow, and of the uses and value of the corn and clover plants, the two great fodder crops of Ontario.

The foundation of success in the raising of fodder, as in all other cultural operations on our farms, depends on a thorough system of drainage. There must be ample provision made for the disposal of the surplus water supply of the early spring. A soil saturated with water that is allowed to dry by the slow process of evaporation can never produce profitable crops. There are thousands of acres of tillable land in the Province of Ontario that are producing very little, owing to lack of drainage, that would, if properly drained, become the most productive

parts of our farms, and add infinitely to their capacity for carrying live stock. Undrained tillable land makes an excellent duck pond in the early spring, and later in the season makes an excellent place for the production of a fine crop of sow thistles, but it is not suitable for the production of a profitable crop of corn or clover, the mainstay of the dairyman.

Then the question of crop rotation should receive attention. Every dairyman should decide on some plan of rotation and practise it. A three-year rotation consisting of clover, corn and grain is eminently satisfactory in keeping up soil fertility and subduing weeds. The prevalence of weeds in many of our Ontario farms argues careless methods of farming on the part of many of our farmers. It should not be so. It is not a profitable method of farming, nor is it creditable to Ontario agriculture. Mustard and sow thistles are not nearly as valuable for fodder for dairy cattle as alfalfa, and their presence in our cultivated fields gives ample testimony to our defeat in our chosen calling or to an indifference which is infinitely worse than defeat. Every farmer should inaugurate a war of extermination against weeds by means of great carefulness as to the source of his seed supply, especially grass and clover seed, by thorough cultivation and by the short rotation.

The most essential part of every system of rotation is of course the clover crop. This crop not only furnishes a large amount of food per acre but it is also a food of good quality, for it contains a high percentage of protein or nitrogenous substances, an element in which the rest of our bulky fodders are very deficient. Careful experiment has proven that the ration for the dairy cow should contain about one part in six of digestible protein. It is because of the fact that the composition of the red clover plant so nearly corresponds to this standard that we get good results from feeding red clover alone.

The red clover plant is also very valuable in the rotation, from the fact that it is a restorer of soil fertility. It has the power in common with other legumus, by means of certain bacteria which are harbored in the roots of the plants, of fixing the free nitrogen of the air—not otherwise available—and storing it not only in the leaves and stem of the plant, but also in the roots. By the decomposition of these roots in the soil nitrates are formed that are so essential to the growth of our corn, root, and grain crops.

Again, aside from the system of crop rotation decided on, every dairy farmer should grow some alfalfa clover. The success of this crop under Ontario conditions has been so amply demonstrated and its feeding value so thoroughly proven, that a dairy farmer cannot afford to neglect the growing of a quantity of this most valuable of all the clovers. Alfalfa hay is very rich in protein, containing about one part protein to four of the carbohydrates and is, therefore, the best fodder that we can grow to feed with our coarse fodders that are low in protein, such as corn silage. Alfalfa and corn silage combined make a balanced ration, and their use will eliminate the necessity of using expensive concentrates, such as bran and oil meal to balance up the ration.

The corn crop should always follow the clover. If the sod fields need draining, it should be attended to as soon as possible after the hay is removed. The best method of preparing the sod for corn may vary owing to different conditions and qualities of soil, but we have secured the best results from summer plowing of the sod, disking freely, and then ridging up in the early fall. This insures a good state of tilth, making the plant food available and drying and

warming up of the soil early in the spring. Corn should be planted as soon as the soil is sufficiently dry and warm and not before. There is nothing gained by too early planting. Corn requires nearly 80 per cent. Fahrenheit to germinate satisfactorily, while the other cereals germinate at a much lower temperature. On the other hand, corn planted late in the season, seldom matures properly. There is nothing better for soiling purposes in the early fall than a piece of sweet corn. It is very palatable and has the highest food value of any of our corns, because it contains more protein and oil. Of the sweet corns Stowell's Evergreen is generally conceded to be the best variety for this purpose, and especially some of the early strains that are commonly grown in the canning districts. Some of these will mature sufficiently for soiling purposes in from eighty to ninety days and produce also a high percentage of ears. Immature corn has very little feeding value for any purpose. Corn to be valuable for soiling purposes should produce a large amount of fairly well matured ears, and this is the test of value of any variety for silage purposes as well. The dent varieties give better results than the flint as a rule. Whenever they can be grown for silage purposes, they have good ears, a large amount of coarse fodder and comparative freedom from suckers, which is a decided objection to some of the flint varieties.

In ordinary practice it is advisable to grow in hills never closer than forty-two inches apart each way, three grains to the hill. This gives about the right number of stalks to the acre. Seed corn should always be tested before planting. It can be done very easily by putting about two inches of pure sand in an old pan or dish of any sort. Moisten it thoroughly. Press the corn grains, germ end down, into the moist sand. Cover with a thin muslin or cotton cloth larger than the dish. Then put an inch or an inch and a half of sand on top of the cloth, moisten again and put the dish in a warm place. In about forty-eight hours you can lift the cloth and the sand right off the corn, and if the seed is good it should all have germinated, provided it has been kept moist. With good seed eight to ten pounds to the acre is quite sufficient. The corn crop should receive frequent and thorough cultivation, never allowing the weeds to get a foothold. Cultivation should be continued in the late stages of growth of the plant. It is between the tasselling and the glazing periods that the corn is drawing most heavily on the store of moisture and plant food in the soil, and it is then that cultivation is most needed. Many dairy farmers stop cultivation even before the tasselling stage. It is much better to continue cultivation right up to harvesting of the corn crop. This work at this period cannot be too much emphasized, for it will always result in a greatly increased crop of corn. A wire muzzle made of ordinary soft fence wire, which any farmer can make in a few minutes, will prevent any injury to the crop by the horse. Corn is the mainstay of the dairyman. The corn crop properly handled never results in crop failure. Hay may yield a very light crop, and grain crops may be, as they sometimes are, almost a total failure, but a corn field properly handled that did not produce a large amount of fodder for dairy cattle is something altogether unknown.

Our dairy farmers should grow plenty of corn and clover, for the capacity of our farms to carry live stock is only limited by the amount of corn and clover we can grow, and this with good management is practically unlimited.

COW TESTING ASSOCIATIONS.

R. S. Hamer, B.S.A., Perth.

In the building up of a good herd of dairy cows there is no factor of greater importance than an exact idea of the individual performance of each cow.

In spite of a strenuous educational propaganda to emphasize this idea, no factor is more neglected in proportion to its importance by dairy farmers throughout Canada..

A few years ago Canada's Dairy Commissioner put himself on record to the following effect:—"Any scheme which has for its object the improvement of our dairy stock must provide for a study and record of the performance of the individual cow, as well as deal with the management of the herd, including its care and feeding, and the breeding of animals to replace those which are discarded in the weeding process. Individuality can be determined only by the weighing and testing of each cow's milk."

This doctrine was backed up in a very practical way when, in 1904, the Dairy Branch in Ottawa undertook the organization of Cow Testing Associations in the Province of Quebec, to provide an opportunity for farmers to keep a systematic and at the same time a semi-official record of their cows. This system has since been extended to all parts of Canada, until in 1909 there were some 94 Associations in operation, 30 of which were in Ontario.

At the present time the Department is keeping records of upwards of 10,000 cows. While in itself this total sounds large, it is in reality a very small proportion of the number of cows in Canada, when it is remembered that in Ontario alone the number of cows is upwards of one million. It is not the purpose of this article to seek for reasons why a practice, which should appeal so strongly to the business instincts of the farmers of Ontario, has not grown more rapidly in popular favor. It is the aim of the writer, in his capacity as Secretary of one of the Ontario Associations, merely to add one more link to the long chain of evidence upholding the practice.

It may be well perhaps at the outset to outline briefly the method followed by an Association organized under the Dairy Branch in Ottawa.

A Cow Testing Association usually numbers from 10 to 20 members, who agree to weigh each individual cow's milk morning and evening, on three days of each month, at the same time taking samples, which are kept in a composite sample bottle for testing at the end of the month. While daily weighings would be more exact, it has been found that, if the milking is done at the usual hour, on three days of the month, at intervals of ten days, the total weight when multiplied by ten will correspond very closely with the total obtained from daily weighings. Usually either a cheese factory or a butter factory constitutes the centre of the Association, and if the maker is competent to do the testing, the sample bottles are brought in to the factory at the end of the month. In exceptional cases, other arrangements are made by the Dairy Branch, but in any event the cost of the butter fat test is borne by the Dominion Government. Each month the sheets containing the records of the weights of milk, together with the butter fat tests, are forwarded to Ottawa, where the total weight of milk and of butter fat for each cow is computed. A report showing the record of each cow to date is forwarded to the owner, accompanied by a summary of the Association for the month. The

records are to this extent official. In some instances Associations are keeping records of the weight of the milk only. This is at best an incomplete test, but owing to the fact that most cheese factories at present pool the milk, and owing to the difficulty experienced in many sections in getting satisfactory tests, this form of association is more easily established and more easily kept running smoothly. Should paying according to test ever become the general practice in cheese factories, individual butter fat tests will receive much more attention, and Cow Testing Associations will require far less fostering than at present. Certainly the Dairy Branch could scarcely do more than it is now doing to encourage farmers to take up the work. All expense, except the cost of the necessary spring balance and the test bottles, is borne by the Department. Every step which would make the work of greater interest or of more value is taken as soon as it is seen to be advisable. About the only requirement from the owner is that he spend from one to two minutes extra on each cow, three times in a month.

That the information obtained and the stimulation of interest more than repays the slight expenditure of time and money has been indicated over and over again in the reports received from members of Associations, and in the comparisons of individual cows and of herds published from time to time by Mr. C. F. Whitley, who has charge of the records in Ottawa. So many of these comparisons have been made, and so startling are some of the contrasts that to add to the number seems almost superfluous. From the records of the South Lanark Cow Testing Association for the seasons of 1908 and 1909 a few illustrations have been selected, however, to indicate the striking differences which occur in an Association of two hundred cows in what is considered a good dairy section in Eastern Ontario.

Since all of the cheese factories in this district pay by weight and not by test, the comparisons made have to do with the total weight only. Records of butter fat were kept, however, and the figures in some instances were turned to good account by herd owners who make considerable butter during the winter months. The comparison of different herds is not one of the primary objects of an Association, and, as a matter of fact, fair comparisons based on herd averages are impossible since the average production is affected very materially by the proportionate number of heifers and strippers, whose figures may be included. More especially is a comparison for only a part of the season unfair, since the herds in which all the cows freshen in April and May undoubtedly have an advantage over those herds in which most of the cows freshened earlier, when the figures for the six factory months only are included. At the same time some instructive comparisons are possible, especially with regard to the relative position occupied by the herds from month to month. In the season of 1909, for instance, the difference in care and management towards the end of the season was reflected very clearly in the change in the position of some of the herds. Some of the herds which stood high in June, while pastures were good, dropped below the Association average during the leaner Fall month. The herds which stood at the top of the test in the Fall were those which did not have to depend on pastures alone for their raw materials. To form a basis of comparison the Association average for each month was worked out, as well as the Association average for the six factory months. The following lists show the figures of the herds which were above the average in June, August and October, and those which excelled for six months:—

June.		August.		October.		Average for 6 Months.	
Herd.	Lbs.	Herd.	Lbs.	Herd.	Lbs.	Herd.	Lbs.
11	1,090	7	885	6	652	7	849
9	1,071	6	829	7	576	11	812
7	1,014	11	792	16	564	6	782
8	943	8	768	17	503	16	677
6	888	3	718	11	492	3	666
16	861	..	..	3	489	..	..
3	850	..	..	..	..	..	..
Assoc. Average, 825		Assoc. Average, 467		Assoc. Average, 297		Assoc. Average, 486	

The lowest herd average in each month was as follows:—June 619, August 467, October 297, for six months 486.

It will be noticed that each month the best herds were producing nearly double the quantity per cow what those at the lower end of the test were averaging. It is a simple question in arithmetic to reduce this difference in production to a dollars and cents basis.

It is in the comparison of individual cows in his own herd and in those of his neighbors, however, that a member can gain the most from the figures. Almost every dairyman who has never weighed each cow's milk regularly has an idea that he can estimate pretty closely the relative production of his cows. Almost without exception, however, when systematic weighing is commenced the figures contain many surprises. Guessing at the amount of milk taken from each cow is most unreliable. A hard milker may take longer to milk and yet give less milk than a cow milked in half the time. Even when each cow's milk is taken away and emptied separately, appearances are very deceptive, as the milk from one cow may contain more froth than that from another. Moreover, the daily fluctuations of certain cows and perhaps of the whole herd are lost sight of until brought to light by systematic weighing. Also the showing made by the persistent milker requires demonstration in actual figures to be properly appreciated.

As an example of differences which may exist in one herd in monthly productions, it was noticed in the month of June, 1908, that the best cow and the poorest cow, out of the 190 cows in the Association, belonged to the same herd. These two cows freshened one week apart, both were in normal health, and their ages were eight and seven years respectively. The first gave 1,310 lbs., and the second 540. The difference, when valued at 90 cents per hundred, came to $6.93 for the month; or, putting it another way, the first cow gave nearly two and one half times as much for her feed as did the second. Taking the figures for 1909 the limit of production reached in each herd in the best and the poorest months of the year are shown in the following list:—

Best Cow in Herd in June.				Best Cow in Herd in October.			
Herd No.	No. lbs.	Herd No.	No. lbs.	Herd No.	No. lbs.	Herd No.	No. lbs.
7	1,500	3	970	6	820	11	570
6	1,190	19	930	17	720	3	570
11	1,190	5	895	16	700	14	520
16	1,175	17	890	7	680	2	510
9	1,170	14	890	5	625	22	445
8	1,130	2	880	19	600		
22	1,000						
Assoc. Av.	.....	.....	825	Assoc. Av.	.....	.....	472

While the record of the best cow in the herd is no indication of what the herd may average, the figures are nevertheless interesting in that they represent the highest point reached by each herd in each of these two months. Figures which are of greater importance to the owner in each case, however, are those pertaining to low yields. The extent to which he is governed by this information in weeding out his herd will determine to a very great extent the average of his herd in subsequent seasons. It is admittedly a very difficult matter to maintain a herd of high average productiveness. The figures of some of the herds in this Association, however, show very clearly the influence of long years of selection. In the month of June, 1909, for instance, the poorest cow in one herd of nearly twenty cows gave 750 pounds, while the best cow in another herd gave exactly the same quantity. The high standard attained by the first herd was not attained through any haphazard method of breeding and management, but was the result of years of effort and close attention to details.

From the figures on hand, innumerable comparisons could be given, but all lead to the same conclusions—that the difference which exists between the productive capacity of cows is far greater than the average farmer realizes, and that the proper method of comparison is based on a knowledge of the production of individuals as represented in actual figures. Not only are figures the only safe guide in weeding out, but in addition they serve as indications throughout the season of the general thrift and condition of the entire herd and of the individuals which comprise it. The stimulation of the interest of the owner in his herd and the satisfaction of seeing improvement reflected in the returns are perhaps the strongest forces in leading a man to keep up the practice of regular weighing once it is commenced.

In addition might be mentioned the advantage of having official records to produce in making a sale of a cow or of one of her calves. Pure-breds are sold almost entirely upon the evidence of their productive capacity as indicated by official records or by private tests. There is no reason why the practice should not be extended to the purchase of grades, and as years go by there can be no doubt but that it will become more general than at present.

The expense and time involved in keeping records under the association system are so insignificant in view of the information gained that the only wonder is that those in charge of the work are not overwhelmed with applications for assistance instead of having to resort to every possible agency to impress the importance of this question upon the farming public of Canada.

POSSIBILITIES IN MILK PRODUCTON.

When we examine the reports of Cow Testing Associations, and observe the methods practised by the average dairyman throughout the Province, it becomes quite apparent that a great deal may be done to improve our herds, and make them more profitable. Up to the present time very little attention has been given to the selection and breeding of the cows used for milk production. The difference between the average production for the Province and the records of herds which are properly taken care of is far too great, and is one of the weak points in Ontario dairying. The conditions under which many herds are compelled to exist cannot result in profit to the owner. We must be made to realize that in order to make our cows profitable, they must be liberally fed upon nutritious foods, supplied with pure water, and properly housed and treated. We must keep records of the in-

dividual animals of our herds in order to weed out the boarding cows and substitute profitable ones in their places. It is impossible to do this without a systematic record of each cow's work.

Do not keep more cows than can be properly cared for. Some cows milk heavily for a very short time, and are dry for a greater part of the year. These animals are often looked upon as the heavy producers, when, in reality, the cow giving the medium flow of milk for ten months in the year is the cow that is making the profits.

S. A. Freeman, of Oxford County, puts the case well, in saying:—"It is not what the cows produce, but, do they pay, or do they not." Four years ago he increased his herd to 70 cows, when they produced 360,431 pounds of milk, averaging 5,149 pounds per cow; the next year, 411,027 pounds, averaging 5,871 pounds per cow. The following year he reduced it to 65 cows, which produced 403,714 pounds, an average of 6,211 pounds. In 1909 he again had 70 cows (including 7 two-year-old heifers), which gave 469,654 pounds, averaging 6,708 pounds. Considering the size of the herd and very dry weather, he viewed the result as not so bad for common grade cows, with perhaps more Shorthorn blood than any other kind. The increase in four years was 1,664 pounds per cow. Twenty of the herd averaged 8,724 pounds. Most of the improvement was accomplished by keeping records of each cow, weighing the milk three times a month and culling out the poor producers. He hopes that in four years the whole herd will average 8,000 pounds per cow. Regarding feeding, he built silos and grew corn. In 1907 his cows had $604.31 worth of oat chop, bran and shorts; in 1908, $627.64 worth of the same feed; and in 1909, $819.93 worth of oil cake, oat chop and bran. This year he valued the chop at $1.25 per cwt.: previous years, $1.00; bran was $2.00 per ton higher. In September and October he fed $134.00 worth of bran with silage, on account of drought. These conditions made their feed about equal to previous years. He had roots then, but none this year. He attributes the increased yield to better cows and more regular and careful feeding.

As to care of herd during 1909 he tried to have his cows freshen during March and April, and has been very successful. His experience is that cows freshening then, with good feeding until grass grows, will give more milk than if they freshen at any other time of the year. To improve and keep up his herd, he has started raising heifer calves from his best cows. Further, he aims at having competent milkers, and each one milks his own cows. A poor milker will soon spoil the best cow. One of these, a new hand, had reduced the yield in four of his cows, which he found out through weighing the milk. He tried the cows himself, but had not succeeded in bringing the cows back to their normal flow until he fed a little chop, and he then succeeded in getting eighteen pounds of milk. The poor milker was not allowed to milk these cows again. As regards the cost of milking and of conducting the farm, value of hay and a pasture, fifty acres worth of feed in silo, value of manure, interest on capital invested, the following is a short summary:—

Receipts.

Cash for milk	$5,401 74
878 bush. wheat at $1.02	895 56
Oats and barley	132 00
57 calf-skins	57 00
Total	$6,486 30

Having good wheat land he always prepares 25 or 30 acres of sod and is pretty sure of 800 to 1,000 bushels of wheat per year, and he needs the straw for bedding.

Expenditure.

300 acres, value $30,000, stock and implements. $6,000, at 5%	$1,800 00
Hired help	1,530 61
Threshing	72 00
10 tons of oil cake at $32.00 per ton	320 00
Bran	285 99
20 bushels of clover seed at $6.50	130 00
6 bushels timothy at $3.25	19 50
15½ bushels seed corn	19 37
Taxes	120 08
60 cords wood for men	120 00
500 lbs. twine at 10c	50 00
	$4,467 55
Receipts	6,486 30
Balance for his labor and incidentals	$2,018 75

The condensory having been closed for March, April and most of May, in order to enlarge their plant, he sent his milk to the cheese factory. Had he received condensory prices for these months he would have realized $250.04, giving a balance of $2,268.79 in his favor, and showing an average of $80.73 per cow.

A. A McLennan, Glengarry County, has a herd of twenty-four good grade Holsteins and a pure-bred Holstein bull, and each year he raises a few calves. They are kept in a first-class stable, well-lighted and well-ventilated. The cows are milked for about ten months of the year. They are well fed, having in winter all the silage, hay, clover and straw they can eat, together with roots and meal; and in summer an abundance of grass. They are always ready to go straight to the stable, where they have salt at the side of the stall and a little meal in the manger, after having drunk from trough and tank a plentiful supply of water with the chill taken off, which encourages them to drink more freely. Although he has no individual records, he keeps only cows that yield a large supply of milk. This is sent to the factory to be turned into butter or cheese, or to the city, and is paid for twice each month. His hogs are pure-bred Yorkshires, and litters, ranging from 175 to 200 pounds, are sold at about eight months old.

MILK RETURNS FOR 1909.

January	$112 19	July	$198 18
February	123 97	August	170 83
March	154 56	September	150 49
April	152 25	October	188 26
May	163 19	November	168 36
June	193 61	December	156 63

Total ..... $1,932.32 or an average of $80.51 per cow.

SUMMARY OF YEAR.

Receipts.

Sold one horse	$200 00
" cows	125 00
" calves	50 00
" hogs	200 00
" milk	1,932 32
" 200 loads manure	200 00
	$2,707 32

Expenditures.

12 tons meal	$300 00
30 tons hay	300 00
Straw	50 00
Man's wages	150 00
1,400 bushels roots	100 00
90 tons silage	100 00
Interest on investment and depreciation on machinery	300 00
Estimated profit	1,407 32
	$2,707 32

The above profit is additional to the increasing value of the stock and farm.

STOCK BREEDING.

H. G. Reed, V.S., Georgetown.

At the present time farmers should look upon the breeding of live stock as one of the most important steps to the improvement of their system of farming. Success in the breeding of stock, as in all other departments of farm management, must be measured by the actual value of its products and the profits that may be derived from them. In the early attempts to improve live stock, breeders were very much handicapped because of the lack of any well-recognized standard of excellence. The standard was continually changing, so that for a time practically no progress was made. That difficulty has been overcome; we have now a well-recognized type in all breeds, and while, no doubt, improvement will still be made by men of great experience and sound judgment, the main object of the ordinary farmer will be to maintain the standard of the present recognized type. The study of the principles which underlie stock breeding is one of the most interesting subjects to which the farmer can give his attention, and a knowledge of those principles and their application in the breeding of stock will give plenty of scope for the exercise of the highest mental powers of the men engaged therein. The stock breeder should be conversant with the influence of natural laws in breeding, such as the law of heredity, the law of atavism, the law of co-relation and variation, the influence of in-and-in-breeding and cross-breeding, and above all, the importance of selection. It is quite impossible to discuss all those subjects in an article like this, so we will confine our remarks to a few practical thoughts that may meet the requirements of the ordinary farmer who is aiming to improve his stock. In selecting a breeding female it can be said that, as a rule, the better bred she is the more valuable she is. There is no doubt, however, that grade females can be used with real good results if they are good individuals, and especially if they have two or more crosses of the breed which they represent. A very low grade, such as a one-cross animal (while much better than a mongrel), is not so valuable as one with two or three crosses.

It has passed into a proverb among breeders that you cannot depend on a half-breed to breed true to type. Select for breeding only such females as are of good conformation, showing thrift and vigor, with an absence of anything that would indicate any constitutional predisposition to disease which might be transmitted to their progeny. One of the most important lessons the farmer has to learn is to weed out his breeding females; breed only from the best and a great improvement would soon be noticed. In the selection of the male breeding animal

the utmost care should be used; he is of much more importance than the female because of the number of his progeny. In no case should a grade sire be used, I care not how good an individual he may be. The male should have, in a well-marked degree, the type of his breed, and he should have more than that, for the type he shows must have become sufficiently established in him from a long line of ancestors, in order that he may have the necessary prepotency to transmit it to his progeny. The low-grade animal cannot possibly have this power to the extent of the pedigree one. The male should be (if possible) more highly bred than the females; this, of course, is easy when the females are not registered. A breeder should always be a fairly good judge of the class of stock he is breeding, so that he will be aware of the weak points of his females, and in mating them endeavor to breed out those weaknesses. A female weak in any point should be mated with a male strong in that point, and thus give her a fair chance to produce progeny better than herself. The man who displays the best judgment in this matter of selection is the man who is most likely to succeed in the breeding of live stock. It is hardly necessary to mention the necessity of a breeder confining his operations to one particular breed. Do not mix the breed; no man ever "made good" by doing so. Keep the breed pure. Select wisely, feed judiciously, and success will come to you.

DESIRABLE CONFORMATION IN DRAFT HORSES.

J. A. MacLean, B.S.A., London.

A treatise of this frequently discussed subject necessarily presupposes a definite comprehension of the requirements of this type of horse, and its various sub-classes. Amongst horse producers there are numerous breeds of draft horses, differentiated in certain breed characteristics, yet all practically agreeing in many fundamentals and only proceeding upon divergent lines after having satisfied the more elemental demands. These horse producers all trim their sails ultimately by the demands of the open market, and consequently the standard there demanded in draft horses, a standard which knows no breed but whose requirements are contained in the word "utility," becomes the general standard of the breeders. Therefore we must look to the market for the classifications of draft horses and the specifications to which they are to be built.

The American market classification of draft horses comprises the following sub-classes:

Heavy draft,
Boston chunk,
Farm chunk,
Expresser or vanner.

These sub-classes differ more in degree than kind. The heavy draft horse is one of the proper conformation and type that weighs at least sixteen hundred pounds, and the more it exceeds that weight the greater is its value. The Boston chunk might be described as a heavy draft horse built somewhat to pony proportions. It must have the same type and conformation as the heavy drafter, with an abundance of style and spirit, but in weight falls between fourteen hundred and sixteen hundred pounds. The farm chunk weighs from twelve hundred to fourteen hundred pounds, and besides being deficient in weight is usually somewhat more upstanding and less stylish. These two latter classes are in some dis-

tricts combined and designated "light drafters," but such a procedure is confusing, as is readily substantiated by the nondescript array of light draft horses appearing before the judges at our fairs, and the difficulty which those judges have in trying to recognize and properly rate draft horse merit in twenty-four hundred and three thousand pound teams. The expresser or vanner is scarcely in the draft horse class; he is clean-legged, weighing about twelve hundred pounds, stands from 15.2 upwards, shows more daylight beneath him than the true drafters, and must be a stylish and strong enduring goer, having the ability to move a good load on a light wagon at a rapid gait day after day.

The function of the draft horse is the pulling of heavy loads at a brisk walking gait, usually on more or less good roads or paved streets. The feature emphasized is the weight of the load, while speed is entirely secondary, but not forgotten. To have this heavy draft capacity, weight in the horse is absolutely essential; it is required to furnish the muscle or motive power, and equally as necessary to keep the horse on the ground just as weight is required in a freight engine that

A young Clydesdale Stallion. Possibly a little rangy, but sufficient substance and quality to make him one of the best.

it may move its heavy train instead of remaining stationary while its wheels fail to grip the rails. A nervy, muscular, but small horse, hitched to a heavy load, slipping, sprawling, or pawing the air with his front feet, is an illustration of the result of lack of weight which all have seen.

Simultaneously with the demand for size in the draft horse comes the demand for type. Usually the individual which fills the previous demand satisfies in this latter one also, since a greater or lesser degree of variation is permissible. However, the ideal calls for a horse that is compactly built, with heavy ends connected by a short, deep, strongly made middle, and as close to the ground as is symmetrical with his size, at the same time allowing for the free, active use of his body.

Passing from the features of weight and type, the utility and consequently the value of a draft horse is almost entirely determined by his conformation, and if he is seriously deficient in any of the many vitally important points in this respect, his size, style, beauty or type can in no measure atone for these short-

comings, and discreet buyers will refuse to waste time by another look at him. For convenience and system, conformation can well be discussed under the divisions of head and neck, body, feet and legs, which outline will here be followed.

The head of the draft horse is of more importance as an indication of the stamp and character of the horse than many people consider it. Its shape is to a considerable extent indicative of the general form of the animal's body, its form denotes the disposition, nervous force, vitality and enduring powers of its owner; its comeliness or lack of it makes or unmakes an otherwise attractive animal. In size it should correspond to that of the animal, being smaller proportionately in the largest horses. From the eyes up the head should be of good length, and from the eyes down it should be relatively short. It should be broad and flat between the eyes, narrowing somewhat as it approaches the poll. Viewed from in front the face should gradually taper to the muzzle. The profile of the face should be straight. A slightly bulging forehead and a Roman nose are departures from this standard that are frequently met with, and are usually considered indicative of a rather strong-willed horse, which, if thoroughly mastered, has an enduring determination. The eyes should be bright, large, full, prominent and animated, yet placid and fearless. They indicate largely the vitality and disposition of the animal. The ears should incline to length rather than shortness; should be placed quite close together, and should incline slightly forward and inward when carried erect. The nostrils should be wide apart, large, fine and flexible; the lips should be carried firmly together and be neat. The head as viewed from the side should show good depth in the lower face, and especially at the angle of the jaw, while the distance between the jaws at the angle should be great. The neck should be of good length, neatly joined to the head without undue throatiness, well muscled, slightly arched, and fitting smoothly into the shoulders. The carriage of the head and neck is to a large extent determined by the conformation of the shoulder, but a loftily carried head is always most pleasing.

Since weight, without sacrifices in other respects, is always sought and is practically all contributed by the body, a wide, deep, compact muscular body must always be the standard. The withers should be high and fine, the shoulder long with the point set well forward, and the top thrown well back, thus giving a splendid slope. In draft horses too much slope is possible for heavy work, causing the collar to draw upwards, thus choking the horse, but so improbable is such an occurrence that it scarcely deserves mention. The shoulder should fit smoothly into the body. A long shoulder generally slopes well, and, conversely, a short shoulder is usually upright. Too much emphasis can scarcely be laid upon this requisite, since the line of the shoulder bears a close relation to that of the pastern, and through the proper adjustment of these two arises that elasticity requisite to withstand the concussion of city streets. The breast should be full and well muscled, the chest should be deep with ample thickness. Since this region contains the vital organs, the efficiency of the animal is to a large extent determined by the capacity of the chest cavity; ample room for the heart and lungs, therefore, gained by wide-sprung and deeply-carried ribs, must always be insisted upon.

Since the load to be moved centres upon the shoulders and the motive power is to a very great extent exercised by the hind parts of the animal, it is essential that the back be short and strong, and particularly the region of the loin or coupling must be short, broad and heavily muscled. The distance between the

last rib and the hip bone should always be relatively short, or in other words the animal must be close-coupled. As depth of chest is essential for most effective vital organs, depth of flank is important as indicative of efficient digestive organs. A close-coupled, deep-ribbed, deep-flanked horse is always a good doer, a heavy eater, making good use of his food and having the ability to withstand hard work; a long-coupled horse having a tucked-up flank almost invariably gives way under the stress of severe tasks; in trade parlance he is called a homesick type, meaning that he must not be parted far from the feed-box.

The muscles of the loin, croup and thighs supply the power which moves the heavy loads, and consequently that conformation of rump, croup and thigh which ensures the greatest development of muscle in these parts is most desired. Beauty asks that the croup be as nearly level as possible, width of rump and croup, and length of croup with heavy muscling in these parts is sought. The quarters and thighs must be heavily muscled and consequently thick, this muscling should carry down deeply towards the hocks. The lower thigh or gaskin likewise should, as viewed from all sides, present the appearance of having a generous supply of muscle. The gaskins and the forearms, it has been found, contain a lesser deposit of fat than do other muscular parts of the body in a highly conditioned animal, and as a consequence in fat animals the fulness of these parts is taken as an indication of the true degree of muscling elsewhere existing in the animal's make-up.

The position of the limbs in regard to the body is of great importance. Viewed from in front the fore limbs should be set well under the body, otherwise the horse in action has a rolling motion. A plumb line dropped from the centre of the arm should divide the leg into an inner and outer half, strike the foot at the coronet, and touch the ground at the centre of the foot. Deviations at the knees from this correct position gives knock-knees or bow-legs; at the fetlocks similar deviations occur, at the ground the animal may toe-in or toe-out; there are also combinations of these irregularities, such as being close at the fetlocks and wide at the ground or toed-out, a conformation that ensures interfering. Not one of these deviations is desirable. Viewed from the side a plumb line dropped from the centre of the elbow joint should divide the leg to the fetlock into anterior and posterior halves, and reach the ground posteriorly to the heel. Buck-knees and calf-knees represent some of the deviations from the normal condition.

Aside from the correct position of the leg, there are other important features demanding close scrutiny. The arm should as near as possible approximate a line parallel to the earth, thus making the angle between it and the shoulder blade as small as possible. The elbow should be close to the body. The fore arm in comparison to the cannon should be long with a heavy muscling. The knee should be wide, deep and strongly defined, giving a rugged appearance. The cannon should be comparatively short, broad as viewed from in front, wide as viewed from the side, due to the strong development of the tendons, and thin at its rear. The tendons should be clearly defined, and the entire cannon free from any appearance of meatiness. By no means should the cannon bone appear round, or the leg appear cut-in beneath the knee. A horse having such bone very soon becomes kneesprung at hard work.

The fetlock should be smooth and clearly defined. The pastern should be long and, like the cannon, free from all meatiness. A line from the centre of the fetlock joint to the centre of the grounding surface of the foot should run parallel to the axes of both these parts and form an angle of 45 degrees with the ground. This makes the axes of these parts continuous. Too much stress can scarcely be

laid upon the slope of the pastern, since the shoulder, arm and pastern are arranged to lessen the injury to the foot arising from concussion on hard roads.

If any one part of a horse is more important than another, the feet, pasterns, shoulders and hocks may surely be grouped as the most important parts, for on them are thrown the severest strains; horses give out much more frequently there than elesewhere, and when they do, they never recover. By many the foot is used as the only criterion whereby to judge a horse. Undoubtedly it must receive careful attention. It should be open of hoofhead, wide of heel, of good depth, and large grounding surface. The walls should be of dense texture, and free from any irregularities or cracks. The sole should be slightly concave, the bars strong and the frog large and healthy.

Clydesdale Mare.

The normal position of the hind limbs viewed from the side is explained by dropping two plumb lines, one from the point of the buttock, the other from the hip joint. The former line just touches the point of the hock, passes down to the rear of and parallel to the cannon bone and touches the ground to the rear of the centre of the sole. The other line strikes the coronet and reaches the ground at the centre of the sole. Viewed from the rear, the line from the buttock divides the limb from the hock down into inner and outer halves. The stifle should be set well forward and rather outward. The hock, being undoubtedly the most severely tested joint of the body, since through it as a lever all the stress of the horse's energy is exerted, deserves the closest scrutiny. The point of the hock ought to be of good length, coming up straight and strong in line with the cannon beneath. The hock joint should be wide, deep and sharply defined, with no puffiness or fulness either in the joint itself or in the web of the hock. Particularly should there be no tendency to curb, though in horses that stand under or are sickle-

hocked the likelihood of springing a curb is great even though the hock itself seems to be normal. The cannon bone should be broad, flat, tendonous and clean. The axis of the hind pasterns and feet should form an angle of about 55° with the ground. The pastern, as in front, should be long and clean. The hind foot is more oval in shape than the front foot, with a steeper wall and a slightly deeper heel, but in other respects the demands are practically the same as is required in the front feet. The length of the legs should be proportional to the size of the horse, but generally speaking they should be as short as is consistent with free activity.

PRINCIPLES OF HORSE BREEDING.

D. A. McKenzie, B.S.A., Lindsay.

Few men stop to think of the results that follow the mating of two animals. Having one object in view they allow it to obscure all other possible results. How often we hear a man who owns a mare of an upstanding character avow his intention of mating her with a stallion of opposite character, thus hoping to get a colt which will be a little taller than the stallion and not quite so tall as the mare. Or we hear a man say that because his mare is lacking in development of loin muscles, or some other important character, he will breed her to a stallion that is particularly strong in these points, and how often the man is disappointed when the colt arrives and possesses not only the dam's faults but the sire's also, without possessing any of the desired improvements.

Let us consider briefly some of the laws which govern breeding. The first is the law of heredity. Heredity has to do with the characters common to a race or breed, and their transmission to successive generations. On this law, and a thorough knowledge of it, depends the success of the breeder. If we consider an animal as an organization made up of a large number of characters, with these characters having an arrangement peculiar to each different individual or organization, we will more readily appreciate the difficulties which attend the breeding art. When we mate two individuals or organizations there is no certainty whether the offspring will resemble the dam or the sire, because another law which is always operative steps in. I refer to the law of variation.

All animals vary in some respect no matter how closely related, and this is the factor in breeding that we must take into account when mating animals, if we hope to achieve any measure of success as breeders. Broadly speaking, variation in any kind of animal life is caused by the different arrangement of the characters normal to the breed. When we mate two animals we can hardly hope to have the offspring an exact counterpart of either parent, but rather a mixture of both. The amount of this variation may be influenced by the care which the female receives during pregnancy, by the condition of health of the male at the time of service, by the purity of breeding of the parents, by the wide difference which may exist in the breeding of the parents, and by other causes over which man has only a limited control.

Taking any breed as an example we find individuals that vary in general appearance, and in individual parts as well, and we are prone to say that one animal possesses more of the desired characters than another, when in reality both possess the same number of characters, only in the one they are by their arrangement apparent, while in the other they are obscured or hidden by some other character or group of characters.

Animals will inherit from their immediate ancestors all the characters of the breed and the type of the offspring will depend on the arrangement of these breed characters. They will inherit not only the good qualities but many of the diseases and weaknesses, whether they be of some external organ, as bone spavin or ringbone in the horse, or of some inward organ as tuberculosis in cattle. Or, the weakness may be functional, as lack of fecundity, which among stockmen is commonly known as the tendency to be shy breeders.

Taking all these things into consideration it behooves the farmer to give this matter some serious thought. Do not take the stallion man's word as to what is the best policy for you to pursue. He at all events knows no more and perhaps not as much as you do, when it comes down to actual experience. Avoid violent crosses such as the mating of mares of the roadster type with stallions of draft breeds. Nothing but misfits can come from such crosses. This last may seem like an over-drawn or far-fetched example, but there are plenty of such crosses made, as most horse owners know. I have seen in one of our best counties small mares of roadster type bred to a Belgian stallion, and what the colt would be, heaven only knows. If your mare is a little undersized, think well before breeding to a very heavy horse. If you do not want large horses, or if you want to retain stock of your own breeding, why better to use a medium-sized sire and increase the size gradually. There may be wisdom in breeding a large mare to a small sire, but in the opposite we generally make a mistake.

In selecting a sire choose one of similar breeding to your mare, not abnormally developed where your mare is deficient, but a good average animal in every respect. When such a sire is in your community pay a good fee to secure his services. Scrubs are dear at any price.

THE SPECIAL PURPOSE HORSE IS ONE THAT SELLS BEST.

H. G. Reed, V.S., Georgetown.

The breeding of horses is being carried on more extensively to-day than perhaps at any former time in the history of Ontario. This condition is no doubt due to the high prices which have prevailed for all kinds of good horses during the past few years. In view of this fact the question arises: Is there any danger of over-production? Again, how large a proportion of colts on Canadian farms to-day will be sold when mature at a price which will prove remunerative to the farmers who breed them? As an answer to that question it might be said that it will depend to a great extent on how they are bred.

To-day the horse market calls for animals that will conform to some special type; in other words, they must be such as will classify as either draft, carriage, road or saddle horses. Each of these classes is always in demand, at fair prices, and often at very high prices—as at present. But the horse which will not conform to any of those types, or is what is usually known as a general purpose animal, will never be in as much demand as the special purpose horse, will never command nearly so high a price in the market, and in too many cases will not sell for enough to defray the cost of rearing him.

If a farmer desires to breed a draft horse, he must breed along certain definite lines. This remark will apply to the breeding of road or carriage horses, but the man who breeds general purpose horses can go about it in almost any way he

pleases; in fact, this horse is, in the great majority of cases, a cross-bred animal, and the main reason why we have such a large proportion of them on the farms of the country is because in so many sections breeders have all the different breeds most hopelessly mixed. The result is a lot of nondescript animals which will not classify as anything but general purpose horses.

There is no doubt that this horse is all right in his place, a most useful animal and much in favor for farm work, but one for which there is not a uniform market demand.

If a breeder would only consider that a horse of mixed breeding can as a rule be bought for probably one-third less than a well-bred animal, it should stimulate him to raise the better-bred animal.

First prize, single Dray Horse, at Toronto National Exhibition, 1910.

A farmer might start breeding operations with a mare of no particular breed, and with good luck in a few years have a high-class lot of horses about him. He would have at the outset to select his breed, and then persistently stick to it.

Supposing he selected the Clydesdale, his first foal will be a half-breed. If it should be a filly, at three years breed her to another pure-bred Clydesdale, and the result will be a three-quarter-bred, and so on to the fourth cross, which will enable the breeder to register his filly foals. With good luck a man could, in ten or twelve years, starting with a mongrel mare, so grade up his horses as to have animals eligible for registration. There are, however, thousands of farmers in Ontario to-day who have been breeding horses for forty or fifty years, and who could not produce a horse with two crosses of any one breed. Such breeders are surprised that they cannot sell their horses for as much as some neighbor who has well-bred animals on his place.

This indiscriminate mixing of the different breeds has done more to injure the horse-raising industry of Canada than any other cause. Consequently the farmer who is rearing foals at present, looking forward to a good market in the future, will do well to keep those facts in mind. It is not more than ten or twelve years ago since there were thousands of good horses in the country which could not be sold for one-half what it cost to raise them. They were not bred right, and did not conform to any special type. They were, in fact, general purpose horses and no one wanted them. Thousands of them went to South Africa. In the future let us breed better horses.—Courtesy of *Canadian Farm*.

CARE OF THE NEWLY BORN FOAL.

Dr. H. G. Reed, V.S., Georgetown.

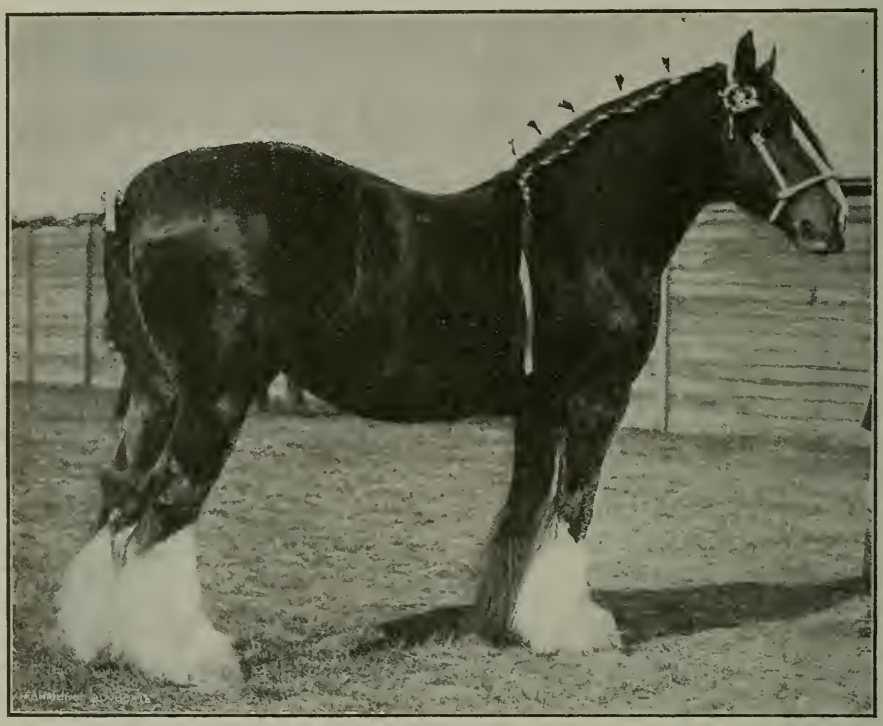
In the majority of cases a foal needs no care only to be left alone and allowed to look after itself. But sometimes the farmer finds that all is not going right and the little creature needs attention. Constipation is not an unusual condition; it is generally due to the retention of the "meconium," a dark-colored, waxy substance contained in the bowels at birth. An injection of warm water or oil will usually cause this substance to be expelled and in most cases answers the purpose better than the administration of oil or other purgatives. Some farmers make it a rule to give a foal at birth a dose of castor oil whether it shows any symptoms of needing it or not. The practice is bad, for a dose of oil will possibly set up an attack of diarrhoea and to that extent injure the patient.

If the mare for some weeks previous to foaling has been fed on some succulent food, there is not much danger of constipation in the foal. Foals born on pasture are seldom troubled in that way. A foal should also be closely watched till it is seen to urinate, and, if during the act some of the urine is seen to escape from the navel opening, some means should be at once adopted to arrest that abnormal discharge. A ligature around the navel cord will sometimes answer the purpose. If the cord is broken off too short for that, the application of a caustic to the parts, such as nitrate of silver, or butter of antimony, will burn a scab over the end of the leaking duct and stop the discharge. If such simple remedies fail, veterinary help might better be procured, for if the condition is allowed to persist, it will in all probability cause the patient to pine away and die a lingering death. This condition is met with more frequently in colts than in fillies.

"Navel ill" is the most serious disease that foals are liable to suffer from. It is often confused with the condition above referred to, but it is altogether a different trouble. It is a germ disease and requires the presence of the germ in the system to establish the malady. The navel is inflamed more or less from the fact that it is there that the germ usually finds an entrance to the system—that being the only raw spot on the body—and the fact of this local inflammation often leads to the conclusion that the navel is the seat of the disease. The germs of this disease seem to abound in many sections and if they get into the system they generally lead to fatal results. Curative treatment is not very successful; a large proportion of the patients will die under the most careful treatment, but while curative treatment is often unsatisfactory, fortunately preventive treatment is easy and usually very successful. It consists in destroying the germ before it gets into the system, by the application of a 10 per cent. solution of carbolic acid and some other disinfectant

to the navel opening as soon as the foal is born, and repeating the application twice a day till the parts heal over, when danger from infection from that quarter is over. This healing-over process will usually take place in from ten to twelve days. This simple precaution has saved the life of hundreds of foals.

Every farmer who has a mare in foal should provide himself with the means of treatment beforehand, more especially if the disease has been prevalent in the section in previous years. There is much less danger from this disease if mares



A prize-winning Clydesdale Mare at one of our large exhibitions. Note the obliquity of shoulders and postern.

foal out at pasture than if they are in the stable or around the barnyard. When a mare is expected to foal in a box stall great care should be taken to see that everything around should be made thoroughly clean. The floors should be thoroughly cleaned and disinfected, also the walls and manger. A plentiful supply of good, clean straw should be provided and all surroundings kept scrupulously clean.

Some foals are born in a weakly condition, are unable to stand and suck, but still have vitality enough to pull through all right if given a good chance. Such a foal should be helped to its feet and allowed to suck at least every two hours night and day until it is able to get up and help itself. Many a foal is allowed to die that might have been saved by a little more attention of this kind, especially at night.—Courtesy of *Farm and Dairy*.

TAKE CARE OF THE FOAL—TREAT HIM WELL IN EARLY LIFE AND HE WILL BE A BETTER HORSE.

Dr. H. G. Reed, Georgetown.

The season of the year will soon be here when a little extra care of the foal will repay the farmer for his trouble. At present the pasture is fresh and abundant and the foals will do all right, but now is a good time to prepare them for the more trying time ahead. A foal should be taught to eat meal as early in life as possible and receive a regular supply twice a day. Even though the dam is not working this will pay, more especially in the case of the heavy draft colts. Then when the hot weather sets in the foal should be brought to the barn during the heat of the day, where he will escape not only the heat, but what is still harder on him, the "infinite torment of flies." While in the barn the colts can be fed thin meal ration and turned out when evening comes. Foals treated thus will make a much better growth than if made to run at pasture (too often poor pasture) and spend their energies fighting flies. When we reflect that it has been good feed and good care through a great many generations which has largely resulted in our present high-class horse, it will be very apparent to all that these desirable characteristics cannot be maintained by reversing the conditions under which these properties have been developed.

The foal well cared for during the summer will do much better when weaning time comes. He will know how to eat meal or grain because he has been used to it all summer. His stomach will have become somewhat enured to the digestion of solid food, and when deprived of his dam's milk he will grow right along and receive no back-set, as happens to all too many foals at this very critical period of their lives.

It is not an unusual sight in the fall to see foals which have been suddenly deprived of their dams' milk and thrown on their own resources for a living, which have become very much emaciated; poor, little, pot-bellied, ewe-necked, dejected-looking creatures with rough starving colts, and every appearance of animals about to die of old age or hard usage, instead of fresh young creatures on the very threshold of life. A foal in this condition has lost something which can never be made good to him again, no matter how carefully he may be looked after. There has been an arrest of growth and a consequent loss of development which is gone for ever. And I care not how good an animal such a foal may develop into, he will not be quite so good as if he had not received any set-back in early life.

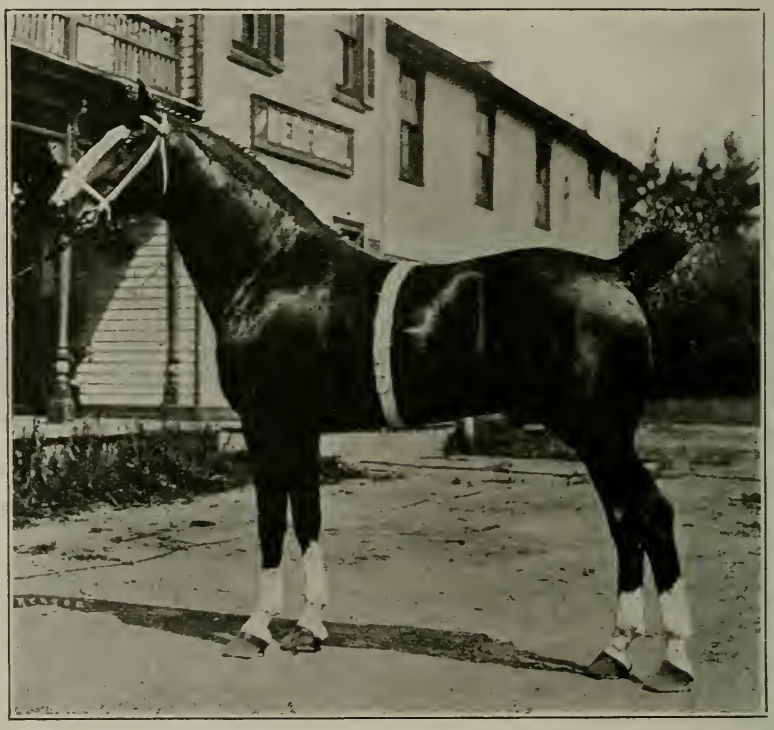
Many farmers are purposely rather careless of their colts. They claim that if they have to rough it to a certain extent when young it will make them tougher and hardier horses. While no doubt many a real good horse has been subjected to hard conditions in early life, he is not good because of that treatment, but rather in spite of it. If he had not been possessed of a vigorous constitution he would have died under the ordeal, and the fact that he is alive proves that he is good, but he would have been better in every way had he been well cared for in early life.

Lastly, a foal should be broken to the halter during the first few months of its life. It can never be done so easily nor efficiently in later life. The little creature is not able to make any serious objection to the halter and yields readily to its restraint, and if broken in early life it will never forget the lesson nor will it ever likely become a "puller" that will smash his tie and break loose in the barn or when tied outside; a most vicious habit which reduces the value of a horse to a very great extent.—Courtesy of *Canadian Farm*.

WATERING AND FEEDING HORSES.

J. A. Macdonald, Kings County, P.E.I.

There is no disproving the statement that it is best to furnish a horse with an unlimited supply of water, which he can take at will. An animal under these conditions will not take too much. But we must take into consideration that few stables are so fitted as to allow this being carried out, and that horses are out on long journeys or employed at work, and come to the stable thirsty, hungry and tired. Seventy-five per cent. of the animal body is composed of water, and it is essential to bodily health that this proportion of fluid and solid constituents be



A typical Hackney or Carriage Horse. Note the short muscleing, the long fore arm and short cannon so essential in a high-stepping horse.

maintained. The secretions and fluid excretions are constantly tending to reduce the fluid parts below normal, and at no time is this more apparent than after long and active work; the loss resulting from increased perspiration and respiration.

At such times many would withhold water till the animal cools down. Contrary to the usual practice, I have always made it a practice to permit the horse to take what water he requires at this time. When the animal is warm in all its parts, with an active circulation, it is best able to resist the chilling effects of a draught of cool water. The stomach being empty, the fluid passes into the bowels and is rapidly absorbed, thus supplying the necessary fluid to the blood, without which the various secretions requisite to digestion could not be maintained. "The most dangerous time to give a horse a full draught of water," says Dr. Dun-

lop, M.R.C.V.S., Great Britain, "is after he has cooled down from fatiguing work and has partaken of a meal. The comparatively small stomach of the animal is filled with energy, the circulation weak, the whole system languid and not in a state calculated to resist the chill. The water mechanically washes the undigested food from the stomach to the bowels, where it undergoes decomposition, evolving irritating and poisonous gases, finally causing flatulent and spasmodic colic or fatal enteritis."

It has been the practice of the writer for several years to allow the horse a full draught of water before feeding, then giving no more for several hours. I have never found it necessary to take the chill off the water when offering it to animals in working condition. This view is certainly against popular opinion on the subject, and Dr. Dunlop, for a professional man, has shown that he has the courage of his convictions in putting forth this very reasonable view. I consider it cruel in the extreme to withhold water from a poor brute perspiring and fatigued on coming in from a hard drive or from heavy work in the field.

Watch the man, working hard all day grubbing out stumps in the farm with the thermometer at 80 degrees to 90 degrees. He will go half a mile to appease his craving thirst and to adjust the equilibrium between the fluids and solids of his body. Does it hurt him? Does it hurt the horse under like conditions? I say it does not. I delight in watching the horse quench his thirst with water taken direct from the well or spring, and to observe the evident relish with which the tired animal partakes of it.

The opinion of many is that feed is wasted when given to a horse after partaking of a full draught of water. If oats are thus given, it is partly wasted. But oats should not be given before the horse has eaten a few pounds of hay. Grain, given on a stomach empty of solids, is partly wasted. How far that "partly" qualifies I am not prepared to say. I have frequently seen men come in with horses tired and hungry, offering them oats the first thing, and the hay afterwards. The horse's stomach being relatively small, the grain is forced out by the hay afterwards eaten by the hungry animal. Were no hay to be given after the grain the practice is all right. Grain, to be fed economically, should be fed only when the horse's stomach is already partly filled. The grain, like the shot in the musket, requires the powder back of it.

It is my practice when working horses at plowing or other work all day to offer water in the morning when they are being hitched up. They will drink very little water anyway in the morning after being watered late in the evening before, and I find they will often drink none, or very little, if it is offered the first thing in the morning before feeding. Did the horses show a disposition, however, to drink heartily after being fed, and on going to work, I should not permit them to do so. I never permit them to drink more than a pailful, and experience shows that less than this amount is all they generally will take. At noon and in the evening the horses are watered the very first thing and are allowed to take all they wish for on coming in. They are then fed some hay first and then grain afterwards. I always take the harness off also, and let the horse roll himself. A roll when the horse is tired and warm is better than an extra feed.—Courtesy of *Farm and Dairy*.

TRAINING COLTS.

W. F. Kydd, Simcoe.

In order that the colt may be a valuable horse after it is trained, it is of the utmost importance that the sire and dam should have good conformation, gentle disposition, with true action. The sire should always be pure-bred. If a harness horse is desired, the sire at least should be a naturally high actor; if a saddle horse is expected, either the sire or dam should be a thoroughbred.

There are three things absolutely necessary to be a successful horseman: Gentleness, patience, and firmness, particularly the first. A few colts require very firm treatment, but my experience has been the pupil is as anxious to learn as the teacher is to teach. When the foal is a few days old I would put on a leather halter (a foal's halter); in all probability it must be held the first time this is done. If

The above illustrates what is expected of a high-class carriage horse when in harness.

the trainer can remember the first day he was at school (if his feelings were like mine), he was afraid, and an unkind word or action from his teacher made him very nervous. Just so with the foal; so be gentle. After the halter is on (no shank on it now), hold it with one hand, then pet and stroke the frightened little creature with the other—all of this to be done in the box stall, beside its mother. Leave the halter on for several days, and every time it is convenient take hold of the halter, pet, and lead around beside the dam.

If the trainer is a horseman (some men will be), the little foal will now come to be petted every time his teacher enters the stall. Foals love to be stroked under the jaw, and usually hold out their heads to be rubbed there.

It should now be tied. First tie the dam to the manger, then tie the foal alongside its mother. Be sure the halter and shank are strong enough that they cannot be broken. Remain beside the foal until it has tried to break loose, for I never saw one that did not try with all its strength. After pulling back for some

time, it will more than likely fall or throw itself down, so there should be abundance of bedding. Unless it gets a foot over the halter-shank, or gets tangled up somehow, do not touch it or speak to it; it may sulk, and remain down for an hour. When it gets up and finds that nothing has hurt it, a most important lesson has been learned. I would not leave a foal long tied at a time, unless I could be near; for, like babies, they have not much patience. With halter and shank, lead it about in the box stall quite frequently. It should now be led out of doors. I would lead the mare with one hand and the foal with the other. With some perseverance and considerable patience, it will soon lead anywhere beside its mother; then lead it alone.

Remember, and never forget, the moment a colt rears, slacken the rope, loosen his head; then there is little danger of his throwing himself. Many a colt has been injured for life by rearing and going over backwards. Occasionally lead, tie, brush all over, and lift its feet, till three past, or three and a half years old.

In the meantime, if it be possible, during the grazing season pasture in a field close to railroad, or alongside a road where there are electric cars and automobiles. Those are fearsome things to a young horse the first time he sees them; so, if accustomed to them more or less from birth, he will take little or no notice later on, when ridden or driven on the roads, where they are often met.

The colt is now three and a half years old; has been well fed, so it is old enough and strong enough to be further educated. I like my colt to be in a large box stall, with a high ceiling, plenty of room to walk about, as considerable of the educating is done in the stable. Put on an open bridle, with large bit, and no reins. I like the bit rather thick; they play more with it, and it makes a better mouth. The bridle may be left on several hours at a time; also, a wide surcingle (or girth), with crupper—a crupper there must be to keep the surcingle far enough back. The surcingle should have three "D's" or buckles on the front of it, and one at the back for the crupper; the front one in the centre for check-rein, and one on each side, about twelve inches down, for side lines. Till this time no reins or check have been attached to the bit. The bridle should have loops, same as driving bridle, for side-checks, because a side-check is to be used. Put on the side-check, passing through the loops, and fasten to centre buckle on surcingle, the head not pulled any higher than if no check were on. Also put a rein on each side, cross those on top of withers, and fasten into lower buckles on surcingle; by crossing on top they remain better in place. This is the first time the colt's head has not been free, so do not take away much, if any, of the freedom the first day. An hour is long enough to leave the tackle on the first time, but it should be put on at least once a day; better twice. After the colt gets accustomed to the check and side lines, gradually shorten them (very little at a time) till the head and neck are in the desired position. On no account leave the head and neck long in this cramped position, because the pain would soon become intense.

The colt should be led out of doors with the tackle on and exercised. It is a common practice when exercising the colt at this stage of his education to attach a long rope to the bridle and make the pupil walk or trot round in a circle. I believe many a colt, from that method of exercising, has got into the habit of throwing out one or both front feet. How can a colt have straight action, going in a circle with bent neck?

So far, this method of training is suitable for any colt of any breed. Of course, draft colts might be trained at two and a half years old. From now on I

will only refer to carriage and saddle horses. It has always been my method to ride the colt before teaching him to go in harness. I put the riding saddle on in place of the surcingle. My saddle has "D's" same as surcingle, so buckle the check and side rein to saddle, having an extra pair of reins for my hands to guide the colt. No bit to be used, except a plain snaffle; the easier the bit, the better the mouth.

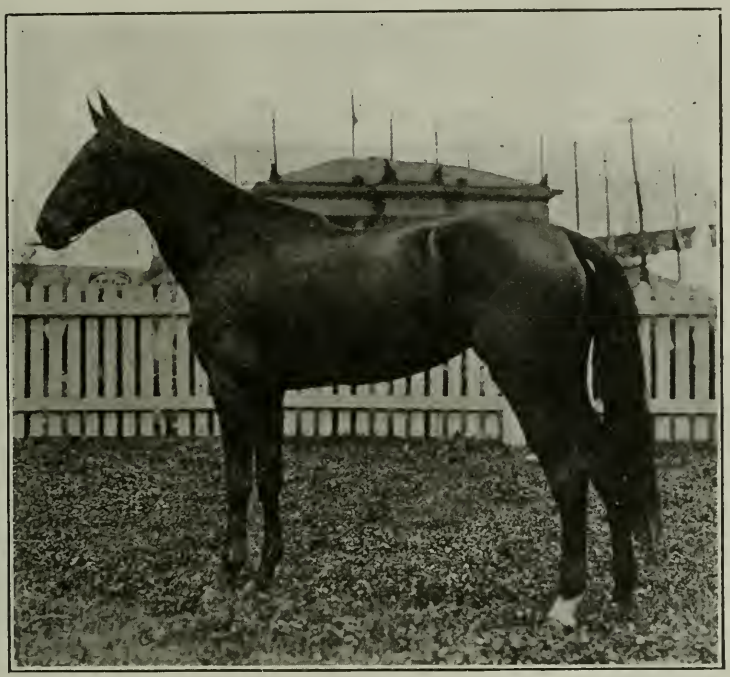
Leave saddle on some time in box stall, till colt gets accustomed to it and finds out it will not hurt him. I then lengthen the near side stirrup, putting my foot in it, and bearing some weight, all this being done gradually, petting and talking to the colt as a horseman knows how. In a few minutes I can usually be sitting on the colt's back, and the colt does not appear to think anything very unusual has taken place. Do this several times a day for several days in the box stall, then lead him out of doors, and do same thing there. After I get on his back out of doors I am not in a hurry to start him walking (slow now, faster afterwards); he will soon wish to move, and I permit him to walk in any safe direction at first. If the colt is inclined to throw up his head, I put on a standing martingale, fastening it on a nose band. By fastening it to the nose band, there is no danger of hurting his sensitive mouth. The colt should be ridden every day several miles, but only taught to walk until he can do that well; he should walk smartly. Gradually loosen the side lines, depending on the reins in the hands to make his mouth. There should be a give-and-take movement with the hands, gently tightening and loosening the reins. This teaches the colt to yield to the bit. After the colt can walk well I urge him to trot, then part trotting and part walking, care being taken not to make him tired, which might cause him to brush (interfere) behind. If the colt should have the least inclination to brush, I would put on boots (it is a safe thing to put them on as a preventive). I have found no boot so good as thick horse blanketing, doubled over a strap all the way round the fetlock. Seeing it is all the way round, it must always be in place, and does not require to be any tighter than to keep it above the fetlock.

If the colt is not suitable for a saddle horse, would not ride him much more. There is considerable demand for combination horses; that is, a ride-and-drive horse. If the colt being trained is a combination horse, this much riding is necessary in his education; but unless he is to be used as a saddler only, would never teach him to canter; harness horses should not know there is such a gait as cantering. If the colt promises to be a saddle horse, he must be taught to canter (that easy-looking, slow gallop). The colt must be taught to canter very slowly; the slower the better, and he should be taught to lead with either foot, at the will of the rider. If I wish him to lead with the off leg (right), I pull his head round to the near (left) shoulder, then touch him smartly with whip or heel on right side. This will almost compel him to start with right foot first, and vice versa. If the colt has not been shod, it should be done before he is driven much on hard roads. Shoe with plates, so the frog will be on ground, where it is intended to be. I prefer to drive my colt in double harness first, with a very reliable horse. A strong, fairly-high two-wheeled cart is the best rig to drive a colt in to begin with. I put on a strong kicking strap, but it is rarely required. I like to drive the colt a little every day, and am careful never to drive quite as fast as the pupil could trot; driving a little too fast is very likely to start hitching (or hopping) behind, and that is hard to stop.

When the colt is quite gentle in harness, then encourage him by speaking or whip, if necessary, to do his best, to make as good a show as possible; but only do

this once a day, and a very short time then. Feed well, so colt will keep strong, and have plenty of life or courage.

To make the colt a finished product, either for saddle or harness, requires experience and time. It is nearly, if not quite, a science, but you must be gentle, patient, and firm.—Courtesy of *Farmers' Advocate.*



Road Horse. Note the greyhound-like appearance, the long muscles and the angular formation throughout.

ROSEVILLE FARMERS' CLUB.

Report of Regular Meeting, Held on March 15th, 1909.

Mr. Kirk Deans: *Preparation of Horses for Spring Work.*

Horses that have been idle since the fall work should receive care, good feed and proper treatment in order to fit them for heavy spring work. Do not allow your horses to become too thin, as it signifies poor feeding. It is good policy to give your horses daily exercise during the winter, as it keeps them in good trim. Give them exercise in harness as they need to get hardened to collars, or sore shoulders will be almost sure to result. There is no need for sore shoulders if properly cared for. Air the shoulders when heated by lifting the collars occasionally and remove the mane from under the collar; see that collars fit properly.

Do not feed too much hay. Feed bran and oats, one to three by measure, at morning and noon and at night some boiled barley. Horses doing little work during the winter will do well on some straw, and it will be economy, especially if the hay is scarce. My experience leads me to believe that it is not necessary to buy stock foods. Oil meal gives just as good results, and one knows its composition.

Clipping is advisable if horses have a heavy coat of hair; they will work easier and won't sweat so much. I don't commend the practice of feeding lightly all winter and then expect to get horses in shape in a few days by heavy feeding. It is much better to bring them along steadily during the winter months and little trouble will be experienced in spring when hard work begins.

Mr. R. G. Carrick: *The Care of the Brood Mare.*

Look at your mare and see wherein she is deficient and then breed her to a horse that is strong where she is weak. Get mares of the proper draft type; scrub mares are dear at any price and are harder to keep in good condition. Give the brood mare plenty of exercise; this is very important. In fact it is well to give her light work right up to the time of foaling, but no heavy strain. Give a liberal ration of oats and bran. Too heavy feeding is apt to cause abortion. When the colt arrives be on hand to assist the mare if necessary. Don't be in too much of a hurry to cut the navel cord. Be kind to the colt and it will develop that trait. If colts do not come right I do not think that the action of the mare causes the colt to turn, but that it was trained wrong from the start.

For running at the navel make a strong tea of white oak bark and inject it. Clean out the box stall before foaling and sprinkle formalin and slaked lime to prevent joint-ill. I don't think there is any difference in the prevalence of joint-ill in sex. Don't cut the navel cord too short; leave about two inches. Colts are easily broken in if kindly treated from the start. One important point is not to allow your mare to get too fat. Feed one half a gallon of bran twice a day with the usual ration of oats. I prefer not to breed before the mare is three years old. I have bred when two years of age, but usually the mare is stunted in growth and not fully developed. In breeding always avoid too severe crosses.

Mr. A. C. Becker: *Care of the Brood Mare.*

One of the most important points in caring for brood mares is to give them plenty of exercise. I prefer to use my brood mare in a team, but not to do any heavy work which would be likely to cause a strain. Keep her sharp shod to lessen danger of abortion. I don't think that heavy drawing hurts a brood mare as long as she is not severely backed or jerked. Be careful not to give her too much hay as she is apt to eat too much if given a chance. I prefer mixed clover and timothy hay. Feed more grain and less hay. I prefer bran to oats. I generally feed a half gallon of bran and a half gallon of chop at each feed. Give the mare some roots as it helps to keep her bowels regulated and you will be less troubled with the colt having constipation. If you have no roots feed salts occasionally. I firmly believe in working my mares until foaling time. When the colt is constipated I use fresh butter and a tablespoonful of whiskey three times a day. Also it is a good practice to inject oil. It pays to lose a little sleep if you want to raise colts. Be on hand to assist the mare in foaling if necessary. Disinfect the string before tying the navel. I have had more trouble with constipation than with joint-ill and believe it is caused by not keeping the mare's bowels loose enough. Wean colt at four months if mare has to work hard. Feed colt liberally, but don't crowd it too fast. A colt that is well kept will be more apt to be an easier keeper than one poorly fed.

GROWING DUCKS FOR MARKET.

M. C. Herner, O. A. C., Guelph.

There is probably no branch of poultry keeping which receives so little attention on the Ontario farms as that of the growing of ducks for market. I presume this is due to the erroneous idea that ducks will eat more than they are worth, and the farmer is, as a result, opposed to having ducks on the place. It must be admitted that the duck is a very hearty eater, but still we cannot form any definite conclusion as to profit or loss in growing ducks until we figure the actual cost of production and the amount realized for the finished product.

Before going into detail regarding the method of raising ducks, it might be well to point out a few things which are absolutely necessary to make duck growing profitable. First of all there must be a market for them. This can be found in

Laying Ducks in an orchard.

almost any of our larger towns and cities. There may be some difficulty at first, but once the trade is secured it is a comparatively easy matter to hold it, providing quality and quantity are guaranteed. In the second place, ducks are the most profitable if marketed at about ten weeks of age. The idea is to hatch and raise them and get them off your hands as quickly as possible. Up to this age, a duck will make the most economical gains, while, as they get older, the gains made, in proportion to the food consumed, will show a very decided falling off. These few statements embrace practically the whole secret of profitable duck-culture.

The natural laying period for ducks seems to be the early spring months, but by certain methods of feeding, eggs may be secured at any time of the year they are needed. The eggs can be hatched by either natural or artificial means, the former being the more common way on the ordinary farm, while the latter is used exclusively on the large duck farms. Hens can be used to hatch and rear them and will generally do it more satisfactorily than the duck herself.

Very little difficulty will be experienced with vermin of any kind, but ducks are not immune to disease. The most common disease among young and growing ducks is indigestion. This may be caused by damp, chilly quarters, or by improper feeding, such as sudden change of feed and irregular feeding. Leg weakness and sunstroke are also common ailments among ducks. The first is due to over-feeding or feeding too large an amount of nitrogenous matter and not providing a sufficient amount of bulky and succulent food. On large duck plants, more than one-half of the bulk of the food is made up of finely-cut green corn, green clover, green rye or green oats. Any tendency towards leg-weakness is generally overcome by this method of feeding.

The first feed for ducklings should be made of equal parts of bran or shorts, corn meal, and low-grade flour. Add to this about 5 per cent. beef scrap. Feed it moistened or slightly wet, five times a day, all they will eat up clean, for the first

Where 50,000 Ducks are turned out annually.

three weeks, and after that only three times a day. Some grit or sharp sand should occasionally be added to this mash. From the very first some green food should be cut up fine and mixed with it, gradually increasing the quantity until half the bulk is green food. An abundance of good clean drinking water must be given, but a pond or running water is not necessary at all, as ducks can be grown just as well without it. Provide plenty of shade, as ducks cannot stand the hot rays of the sun beating down on them.

By judicious feeding and forcing from start to finish, ducks should weigh from eight to twelve pounds per pair at ten weeks of age. Probably the Pekin is the best breed to raise, as they make the most rapid and most economic gains of any. It is generally supposed that more grain is required to grow a pound of duck than to produce a pound of chicken, but this is not the case, as carefully conducted experiments show that it takes about 3.25 lbs. to 3.75 lbs. of grain to produce one pound of chicken, whereas it takes only about 3.15 lbs. of grain to produce one

pound of duck. These figures may seem somewhat low, but where ducks are grown in large numbers even lower figures might be obtained.

The following figures show the results of feeding a flock of thirty Pekin ducks, fifteen of which were hatched the 2nd of May and fifteen on May 6th. These ducks were killed at ten weeks of age when they weighed 128 lbs.

The following feed was consumed, viz.:

Bran	58 lbs.	Beef Scrap	45 lbs.
Shorts	79 "	Heneda Grit	30 "
Flour	44 "	Mica	10 "
Corn Meal	69 "	Bread	33 "
Oat Meal	25 "		
Purina	10 "	Total	403 lbs.

Valuing this feed at two cents per pound, the cost of one pound of duck would be 6.3 cents. Adding to this the cost of labor and so on, the net cost of a pound of duck would not exceed ten cents. These ducks were sold at twenty cents a pound, thus leaving a net profit of ten cents a pound.

Some of the American duck plants are selling dressed ducks on the Toronto and Montreal markets right along at prices ranging from twenty to thirty-five cents per pound. To this must be added the 20 per cent. duty which is paid on them by the buyer. This shows that there is a market for ducks right in our own Province and we do not see any reason why the Ontario farmer should not make an effort to secure this trade, as he can produce the ducks just as cheap as any American duck plant can.

We do not advocate extensive duck growing for the ordinary farmer, but we do say that fifty to one hundred ducks could be raised annually on almost every farm at a very handsome profit. Nothing very handsome, elaborate, or expensive is required in the way of buildings. Almost any shed or outbuilding giving a reasonable amount of protection from storm, wind and rain is good enough to keep ducks in. Ordinary poultry netting two feet wide is all the fencing required where the ducks are not allowed to have free range. It will thus be seen that the capital required to grow ducks profitably is very small indeed.

WINTER EGG PRODUCTION.

Wesley Howlett, West Montrose.

No branch of farming pays the percentage of profit on the capital and labor required as does poultry raising and egg production on the farm.

The cost of producing eggs is from 4c. to 7c. per dozen, according to circumstances, conditions and care given the fowls. For the largest profit a good proportion of the eggs should be secured during the winter. There are many factors that enter into the production of eggs in winter, any one of which, if lacking, is apt to lessen the yield. In the first place we must have fowls that are at laying maturity—pullets that have reached their full size and hens that are in full or mature feather and ripe condition. Pullets of American breeds and hatched in April and early in May are usually the best winter layers after they once get started, but hens in their second laying year are nearly as good if they are well over their moult. Leghorns or pullets of the smaller breeds hatched in May and sometimes in June, when given right conditions, also lay well at this time, but it is necessary to get them started before real cold weather sets in or they will delay until late winter or early spring.

Winter laying is a trait that can be bred into fowls as surely as can any trait of form or feather, but almost any heavy laying strain, when given proper care and food, will produce some eggs in winter, and it is from the most productive of these that a foundation for a winter laying strain should be laid. The winter egg problem can be solved only by producing a strain of fowls that will lay largely in winter, and they must be from a line that has so produced. While by proper care those that are not bred from a line of winter layers may lay moderately, the best winter laying strain with indifferent care may not lay an egg. The maximum yield is secured by having fowls that are bred for the work and giving them every requisite in the shape of housing, care and food. To produce winter layers not only should the chicks be hatched from eggs laid by hens that were winter producers, but they must be raised in a manner to fully develop every organ in the body—that is, we want a perfect hen when matured. Chicks raised largely in the open air mature into pullets that can stand winter conditions, are closely feathered and not seriously affected by cold. These are the fowls that make our winter layers, and these factors are of more importance than breed.

It is essential if we wish to secure eggs in winter that comfortable quarters should be provided. They need not be expensive, but should be constructed so as to be free from drafts, and that fluctuations in the weather will influence the temperature inside the pen as little as possible. There should be plenty of windows, as sunlight, it is well known, is the cheapest and most efficient agent for the destruction of disease germs. A house kept too tight, especially if a little overcrowded, becomes damp and foul. It is necessary, if the flock is to be kept in a healthy condition, that there be perfect dryness and the air pure. The mistake is frequently made of trying to secure a warm building at the expense of ventilation. Hens can stand considerable cold. They should be given an opportunity to keep themselves warm during the day by scratching for a good proportion of their food. They may be easily induced to do this by keeping plenty of dry litter on the floor at all times and scattering the grain amongst it.

The problem of feeding is one of great importance, and should be carefully considered, for on it depends, to a large extent, not only the general health of the fowls, but also the economy which promotes success. It is a subject, however, which should be studied with a large amount of common sense, for there are no hard and fast rules which can be laid down as applying to every case. The price of feeds and general environment should be considered in determining the right rations.

In supplying feed to fowls there are three kinds of constituents which should be present in certain, well fixed proportions, if the desired results are to be obtained most economically. These constituents are mineral, nitrogenous and carbonaceous, all of which are contained in corn, wheat, oats and barley, but not in right proportions to give the greatest egg yield. In addition some animal and green feed should be supplied.

In feeding poultry a valuable lesson may be learned from nature. In the spring the production of eggs on the farm is an easy matter. Fowls which are at liberty to roam find an abundance of green and animal feed on their range, which with grain furnishes a perfect ration for laying hens. In addition to this they get plenty of exercise and fresh air. So far as lies within his power, then, the feeder should aim to make the winter conditions spring-like.

Green food can be easily and cheaply supplied in the form of beets, mangels and cabbage heads. The mangels may be fed whole to the fowls by hanging on nails. Mash composed of kitchen wastes, dry clover leaves, bran and chop mixed

with boiled potatoes, and potato peelings may be fed to the fowls. Animal food can be supplied by feeding livers, beef heads or cut bone.

Grit must also be supplied in some form to enable them to digest their food. Gravel is very good, but fresh supplies must be given frequently, because the hens soon pick out all the rough pebbles and the smooth ones are of very little good for grit. Then, too, hens must have something to make shell. This may be given in the form of lime and broken plaster. Fresh water should be kept before the hens at all times. It is just as essential as food.

During the past five years there has been an extraordinary advance in the price of winter eggs and that in the face of largely increased production, and, what is still more extraordinary, decreased exports. It seems as though prices of strictly new-laid eggs become higher as the production increases. However, there are many people who keep a flock of hens who know only from remembrance what an egg looks like during the winter months and then blame luck and the breed for it when, in nine cases out of ten, it is improper care and feeding.

POULTRY QUESTIONS AND ANSWERS.

Miss Mary Yates, Guelph.

Q.—How do you advise feeding hens for egg production?

A.—The kind of food is not as important as the way in which it is fed. Let the birds work hard for the greater part of their diet. See that the floor of their house is absolutely dry and is covered six or seven inches deep with some loose litter (clover chaff is, perhaps, the best) into which small seeds and grains can be thrown, for which the birds will enjoy scratching. Vegetables and meats are too often omitted and the starchy foods almost entirely depended upon, while they will not give the best returns in either health or eggs. Light, too, is an important factor in egg production. A dark, badly-ventilated house will not ensure plenty of eggs, however well fed the flock may be.

Q.—What do you recommend giving as vegetables and meat?

A.—If possible give the birds access to cultivated runs in summer by a system of alternate cropping, and in winter use finely-cut clover or lucerne, either steamed by pouring boiling water upon it over night or feeding it dry in the hoppers, or using it as litter on the floor. Apples, either sound or rotten, are much relished. A bullock's head placed upon a block in the hen house, and well smashed, provides meat in a capital form; but a more easily managed method for women is to lay in a supply of beef scraps, or blood meal, at the beginning of the winter, and to feed it in hoppers regularly with the other food.

Q.—What do you consider a good, all-round mixture to put into the hoppers as a general diet?

A.—Equal weights of finely-cut lucerne, bran, meal and beef scraps I have found to answer well. The amount of meal and beef scraps increased to as much again in winter. With this diet millet and buckwheat or hemp may be thrown into the litter.

Q.—What kind of house do you recommend?

A.—The cheapest and most satisfactory house I have seen for egg production in this country cost $100.00 and held 300 hens. It was practically a cellar beneath a barn, and was warm, well-lit and ventilated. The water never froze there, neither did the combs of the birds, which were White Leghorns, specially bred for laying.

Q.—What is the best remedy for insect pests?

A.—In one word, it is cleanliness. Keep the houses well sprayed with lime water and crude carbolic or lime water and coal-oil; dip the end of the perches into coal-oil every few weeks. Dust the birds themselves occasionally with flowers of sulphur or a little freshly-ground pyrethrum powder, and give them access to dry earth or ashes in which they bathe themselves to get rid by natural means of the lice upon their bodies, which must not be confused with the red mite that lives in the crevices of their houses by day, and feeds upon their blood by night, if not kept under rigid control.

Q.—Is there any cure for gapes?

A.—Many different diseases seem to be called by this name, but true gapes is caused by a worm lodged in the chicken's windpipe, and if this can be expelled the disease is cured. It is a good plan to fumigate the brooder with the chickens in it. Tobacco smoke answers well; the chickens cough and choke in this atmosphere, and so dislodge the worm. A few minutes is usually sufficient, and the operation must be carried out by a careful person. All refuse should be burned and the brooder disinfected before being used again.

CO-OPERATION IN MARKETING FRUIT.

D. Johnson, Forest.

I believe there is no question that is occupying the attention of progressive fruit growers to-day so much as co-operation in the marketing of their fruit, and where this system of marketing has been entered into in the proper spirit it has in every case proved a success.

We have heard a great deal during the last few years about the great strides that certain individuals have made in fruit-growing. We have learned with pride the possibilities of this industry and the success that certain growers have achieved, but I am afraid we have willingly closed our eyes against the failure which is apparent on every side.

I have no hesitation in saying that the farmers of Ontario have failed as a people to accomplish what might and should be accomplished by the application of intelligent care.

We are glad to know that in certain districts fruit-growing has gone forward by leaps and bounds, but we regret to know that thousands of acres of orchard are a disgrace and an eyesore to the district in which they are situated; orchards that were once planted with the hope and expectation of some time being a profitable source of revenue are to-day neglected and deserted, not for the want of a market, but for the want of a proper marketing system.

During the last few years I have had the pleasure of coming in contact with farmers in almost every part of the Province, and I must confess that it has pained me to see the discouragement that seems to mark the efforts of most of them in the production of fruit.

Often when told of the success spraying, cultivation, etc., would bring them they would tell us that they already had more fruit than they could sell to advantage, and such efforts would only be added expenditure.

This is the deplorable condition of things that exists, speaking generally of Ontario, and I am sure we have not far to go to find that it is all caused by the lack of a proper marketing system.

In order to overcome the above difficulties a number of fruit-growing associations have been formed in various parts of the Province, and in most cases their efforts have met with great success.

It is true that some have met with failure, but in every case that I have investigated I have found that the failure came from the individuals who formed the associations and not with co-operation.

Co-operation in fruit-growing must be entered into with a steadfast determination to overcome all difficulties which when overcome will leave us firmer on our foundation and richer in experience.

The first step in the formation of an association is to get into the organization only those who are alive to the need of such a step, and who are prepared to stand by it for better or for worse; men who will agree to place all their fruit in the hands of the association and who will encourage and not discourage the efforts of the association.

Many a good apple growers' association has been formed by a number of growers getting together and by some simple agreement binding themselves together to pack and to sell their fruit together under a single brand, adopting certain methods of production, such as cultivation, spraying, etc., and agreeing that if they dispose of their fruits outside of the association without permission they will pay a forfeit of fifty cents per barrel.

This last clause is, in my opinion, very important, as it assures the management of a definite amount of fruit which he can sell by contract, knowing that the goods are there and that no member can be tempted to leave him.

An association, of course, should have a board of directors; these men should be of the substantial kind, who know how to grow fruit, the conditions of the fruit trade and who have something at stake, and not men who can talk about what ought to be done, but who wait for someone else to do it. Such men do not understand the first principles of co-operation.

The Forest Fruit Growers' Association, of which I have ever since its organization had the honor of being president, was started on the above method six years ago, and has continued ever since to grow stronger and to promote in the best possible method the welfare of its members. We started and have continued ever since without any capital. Our manager is paid a commission, which he receives at the end of the season when the returns come in. It is his duty to take the same place in our association as an apple buyer usually takes in a district where he is buying, except that he works for the interest of the grower instead of his own. He times the packers, establishes the grades, makes all f.o.b. sales, attends to the collections, ships the cars, keeps the books and pays out the money received for fruit, according to grade of pack.

A small amount of money is required to pay general expenses at the commencement of the season, which is raised by the members giving a joint note at the bank, which is paid off as soon as the money comes in.

We have been able for some years to have all our fruit paid for as soon as loaded on car, so that we are always able to meet our expenses without any trouble.

Barrels and supplies are bought by each member guaranteeing to take a certain quantity; thus the association is able to buy in large quantities at the lowest possible price, and then divide to its members according to their guaranteed orders.

Up to last year all our fruit was packed in a central packing house, which has been a most satisfactory method. Last year some of our members living some dis-

tance from the packing house had their fruit packed in the orchard by the packing gangs sent out by the association, and has also proved perfectly satisfactory to both growers and association.

The result of co-operation here is that the growers are receiving nearly twice as much for their apples as they did before the existence of the association. The growers, encouraged by this, are taking much greater care of their orchards than formerly, and are getting two and three times as much fruit as they used to.

Land suitable for the growing of fruit has doubled in value; orchards being extensively planted, and nearly every day men from a distance call on the writer asking information as to where they can get land to grow fruit.

I look forward with confidence to seeing this district a great fruit-growing centre, and that in a very few years.

There are, I am sure, many places in Ontario which are discouraged in fruit-growing now, but which could be revived as we have been by a co-operative fruit-growing association.

THE MANAGEMENT OF THE APPLE ORCHARD.

P. E. Angle, B.S.A., Simcoe.

Apples are successfully grown on almost all types of soil and in widely varying climates all over Ontario. In detail the work of orchard management will vary with the type of soil and the nature of the climate. This fact makes it difficult to outline in detail any system of orchard management which will be applicable to all parts of Ontario. For instance, in Norfolk County we are situated in what Mr. A. McNeill's map, showing the fruit districts of Ontario, calls District No. 1. This is the most southerly district of Ontario, and the method of orchard management followed here would scarcely be applicable in every detail to the orchards of the Ottawa Valley, etc. Yet the object of orchard management is in all places always the same, namely, to produce yearly a maximum crop of a maximum quality at a minimum expense. To obtain this object certain things must be done. In order to produce a heavy crop of apples and to maintain the vigor of the tree a large amount of plant food is required, and so we fertilize and cultivate the orchard; to bring the apples to their highest perfection of color and flavor a certain amount of sunshine must strike the fruit and the smallest possible amount of plant food must be wasted in useless wood growth, and so we prune the orchard; to secure a crop of high quality the apples must be kept as free as possible from fungus diseases and insect pests, and so we spray the orchard. These operations of pruning, fertilizing and spraying constitute what might be called the general routine, or the ground principles of orchard management which must be worked out in detail to suit the prevailing conditions.

Taking it for granted that we have an orchard suitably located on well-drained soil (for no orchard will respond to any sort of management if it is situated on low, wet, cold soil), I shall discuss the various phases of orchard management one by one.

Pruning.

The objects of pruning are threefold, namely, to thin the tree, to obtain a well-balanced, well-shaped top, and to avoid a waste of plant food in useless wood growth. It is considered that summer pruning will have a tendency to promote

fruit growth or the development of the fruit buds, while winter pruning will tend to develop wood growth. Be this as it may, most farmers are too busy to prune their apple trees in the summer time, consequently late winter or early spring pruning is usually practised. It is not well, however, to prune in early winter, for the heavy frosts may do considerable injury to the new wounds. After the heavy frosts are over, however, pruning may be proceeded with at any time. It may be said that the time of pruning is unimportant; the best orchardists will tell you to prune when your knife is sharp and you have the time. It is important, however, that light pruning be done yearly in preference to heavy pruning every two or three years.

The extent to which a tree-top should be thinned by pruning will depend largely on the variety. For instance, the Greening and Russet, which are not highly-colored apples, do not require as much thinning to let the light in as the

An ideal Apple Orchard. Note the low, well-balanced heads.

Spy and Baldwin. Whatever thinning is done should be done judiciously. The old practice of cutting all bearing wood out of the centre of the tree should be avoided. The ends of the small branches should be thinned, leaving the small twigs a moderate distance apart, and where they are too thick the fruit spurs should be carefully thinned by the use of small hand clippers, always leaving as much bearing wood as possible towards the centre of the tree, so that the bearing wood will be evenly distributed throughout the tree. All dead and decaying branches should be removed, also the branches which are growing cross-wise and rubbing against other limbs. The central leader of the tree should never be cut where it is possible to avoid it. It is always wise to avoid cutting out large limbs wherever possible, but if the removal of a large limb is found necessary, two cuts should always be made in the operation; one on the under side, and one on the

upper side of the limb. This will avoid any breaking or peeling of the bark when the limb breaks. The wounds made by removing large limbs should always be covered with paint or wax to keep out moisture and avoid decay. All cuts should be made close to the main branch or body of the tree from which the removed branch springs. This ensures a quick healing of the cut.

Spraying.

There is prevalent in the country to-day a number of insect pests and fungus diseases which cause untold injury to the apple crop. The bud moth destroys the fruit buds; the codling worm burrows into the apple and destroys it; the tussock moth eats the leaves and the fruit; the apple aphis sucks the vital juices from the leaves and the fruit; the oyster-shell bark-louse and the San José scale suck the juices from the bark of the tree; the apple scab causes gnarly, one-sided and poor keeping apples; the brown rot causes much fruit to rot, and the black rot causes the rotting of apples and the canker on the twigs and limbs of the trees which will ultimately kill the whole tree. These pests can be overcome only by spraying.

The trees should be sprayed three and occasionally four times each season. The first spraying to control the oyster-shell bark-louse, San José scale, aphids, apple scab and canker should be given in the spring when the leaf buds begin to swell. The mixture to be used for that spraying is now, by common consent, the lime-sulphur wash, made either by boiling 20 lbs. of lime with 15 lbs. of sulphur and 40 gallons of water and applied to the trees while warm, or by boiling 100 lbs. sulphur with 50 lbs. of lime and 40 gallons of water and diluted with nine or ten times the quantity of water. Either of these will give a spray mixture with a specific gravity of about 1.03, and either is practically a sure remedy for San José scale and oyster-shell bark-louse.

The second spraying is given particularly to control the bud moth. For this purpose poison must be used and it should be sprayed on the trees after the leaf buds have burst, and just before the blossom buds open. In this way the poison gets on the blossom bud, and when the little grub begins to eat its way into the heart of the bud, where it does its damage, it is poisoned. The poison is added either to the lime-sulphur solution referred to or the ordinary Bordeaux mixture made up of 4 lbs. blue vitriol, 5 lbs. lime and 40 gallons of water, and these act as an additional treatment for scab. Where lime-sulphur wash is used for this spray it will need to be diluted from thirty to forty times with water in order to avoid the burning of the foliage which is just opening. In this district Bordeaux mixture has been used almost entirely with arsenate of lime added for poison, the formula used being 12 lbs. lime, 4 lbs. blue vitriol and 40 gallons of water. Then to either of these solutions is added 5 ozs. of white arsenic and 1 lb. sal. soda and 20 lbs. lime. It is claimed by those who use this mixture that the excess of lime avoids burning the foliage and the russeting of the fruit, which often occurs with the use of the Bordeaux mixture. Splendid success has been obtained by the use of this mixture in this vicinity, but I believe that the lime-sulphur as an all-round spray for the apple orchard is growing in favor here, and I predict a more extensive use of that mixture next year.

The third spraying is given to control the codling worm and the apple scab. The mixture to be used is the same as that used for the second spraying, and it should be put on directly after the blossoms fall. By thoroughly spraying just at this time the open calyx of the young apple becomes covered with poison and the worm, which usually enters the apple at the calyx, is poisoned as soon as it begins

to make an entrance. This is usually the last spraying of the year unless the tussock moth appears in large numbers, in which case a fourth spraying may be given with the same mixture used in the second and third when the caterpillars appear. Of course there is a second brood of codling moth in this district and the trees might be banded in order to catch the pupæ, but spraying is not usually done, the theory being that if the first brood can be destroyed there will be no second brood to treat, and although the codling moth has done a certain amount of damage to apple growers in this district, I must say that they have succeeded exceedingly well in destroying the first brood, and the second brood is usually quite limited. Although spraying looks like a simple matter it is by no means as simple as it would seem. There is no doubt whatever that in order to be effective, spray-

Young Apple Orchard. Note the wonderful growth of clover. It will be a protection to the roots of the trees during the winter, and add to the fertility when plowed under.

ing must be done thoroughly and all parts of the tree should be reached with the mixture. On the other hand there is no doubt that the damage often done by the Bordeaux mixture in russeting the fruit is at least partly caused by excessive application of the same. The successful grower will strive to attain the happy medium which gives best results. Care should be taken in spraying to get the under side of the limbs and the leaves covered. These are the spots where the fungus diseases seem to develop most quickly. The whole operation of spraying is one requiring care and judgment.

Fertilizing.

The average crop of apples will remove from an acre of soil, annually, 52.5 lbs. nitrogen, 14 lbs. phosphorous, and 56 lbs. potassium. A crop of wheat yielding

30 bushels to the acre will remove from an acre of soil, annually, 62 lbs. nitrogen, 20 lbs. phosphorous and 26 lbs. potassium. When we realize that the trees of the apple orchard are annually drawing from the same soil and cannot be rotated to different parts of the farm as can the wheat crop, and know the amount of plant food required to mature a crop of apples, we see the enormous necessity of liberally fertilizing the apple orchard. As with other crops there is no doubt as to the best manure for the purpose. Where barnyard manure can be obtained at a reasonable price, it is certainly the best fertilizer that one can apply. The average farmer, however, has an abundant use for all the manure that he has on the farm for other crops, and where fertilizer must be bought, barnyard manure is often hard to obtain, and is almost prohibitive in price. In this town this year hundreds of loads of manure were sold at $2.00 per load delivered at the orchard three miles distant. In such cases wood ashes furnish a most excellent source of potassium and phosphorous and nitrogen can be obtained from the air by growing on the soil some leguminous crop such as clover or vetch. Good orchardists maintain that good unleached wood ashes are worth 20c. per bushel as a fertilizer for the apple orchard. Thirty to forty bushels per acre is a good application of wood ashes. Where ashes cannot be obtained muriate of potash and superphosphate or ground bone sown at the rate of 200 to 300 lbs. per acre furnish good and comparatively cheap sources of potassium and phosphorous. Where these chemical fertilizers are used it is absolutely essential that a large amount of vegetable matter be ploughed into the soil to furnish humus and to avoid the soil becoming stiff and waxy.

Cultivation of the Orchard.

There has been a considerable difference of opinion among orchard men as to the merits of cultivation in orchards. However, it is now pretty generally conceded that a combination of sod and cultivation in the orchard whereby the orchard may be cultivated for a greater or longer time during the summer according to the nature of the climate and then sown with a clover crop which acts as a sod is the best practice.

Where barnyard manure is obtainable, fair crops of apples of first-class color and flavor are obtained by leaving the orchard in sod and dressing annually with barnyard manure. It seems to me, however, that this method is wasteful of plant food, for we know that cultivation will bring insoluble plant food in the soil into solution, and where chemical fertilizers must be used it would not be at all suitable, because no opportunity is afforded to get vegetable matter into the soil. With scarcely an exception the practice followed in this vicinity is to plough as early as possible in the spring and to cultivate as often as possible after ploughing until the first of July. Where manure is applied it may be ploughed down or worked in on the surface. This stimulates rapid growth in the trees. About the first of July a crop such as clover, cow peas, vetch or buckwheat, is sown. This immediately begins to make use of the available food in the soil, thus apparently robbing and effectually checking the growth of fruit and wood in the tree. This is necessary in order to allow both wood and fruit to mature before the frosts of winter come. If cultivation were continued too late the new wood of the tree could not mature before winter and there is great danger of winter injury to the tree, while the immature fruit would be lacking in flavor and keeping quality. The date at which cultivation should cease will vary with the locality. I should think that in the St. Lawrence and Ottawa Valleys cultivation should cease *before* the 1st of July.

Thinning.

We are just now beginning to realize the value of what the Western fruit growers have been practising for many years, namely, the thinning of fruit where trees are too heavily laden. It has been practised for the last two or three years in this vicinity by some growers with good success. About the first or middle of July small and one-sided apples are picked from the tree and dropped to the ground. Where apples are in clusters they can be all removed but one or two. By doing this all the plant food of the tree is available to develop the apples which remain, and as a consequence a much more uniform crop with a higher percentage of number 1's is obtained. Where a tree is very heavily laden it is sometimes necessary to thin twice in order to get them evenly distributed. By removing one-half of the apples in the summer the picking of the apples in the fall is lessened one-third. It is claimed that this thinning of the fruit, besides giving the results before mentioned, has a tendency to stimulate the yearly production of fruit, and from what I have seen of orchards that have been thinned I am inclined to think that this is true. One great disadvantage of the practice is that the thinning must be done at a time of year when other work on the farm is pressing and labor is hard to obtain, but I think there is little doubt that in the near future the thinning of fruit will be considered by orchardists as necessary as any other of the operations in connection with orchard management.

After the thinning has been done the orchardist has done about all that lies within his power to secure a crop, and if he has intelligently followed such a system as above outlined he will be delighted with the bountiful way in which nature will respond to his efforts.

CARE OF THE FARM ORCHARD.

W. J. Kerr, Ottawa.

This is rather a broad subject, containing enough material for several addresses, so we must not go too deeply into any one part of it. To properly care for an orchard, we should begin a year or two before the trees are planted, and select suitable soil in a suitable location. Any good, warm, well-drained soil may do, but it is desirable to select soil of a lime-stone tendency if possible. There is no use planting on soil with a cold, damp bottom, as the trees soon become black-hearted on it, and are very short-lived. If no naturally well-drained soil is available, it is desirable to thoroughly underdrain it before planting on any with a cold, wet sub-soil. The soil should be in good tilth, and capable of producing good crops of potatoes, roots or grain.

The best location is on elevated ground, with a slight incline towards the north. Low, level ground is not good, as the frost settles over such land during cold nights in spring, and is apt to do much damage to the blossoms and young growth. The cold air, being heavier than warm air, settles into the low places, and forces the warmer air out and up to the higher levels, so the higher ground is preferable.

Trees suffer much less from sun-scald if planted on a northern slope than if on a southern or south-western slope, as the hot March sun does not start the sap in trees planted on a northern slope so early as in those on a southern slope, and consequently there is less injury from frost at night. The soil should be put in

good condition by growing, under high cultivation, some hoed crop the year before planting the trees.

The selection of varieties is a very important item, enough varieties being selected to satisfy the tastes of the family, and but few of a kind planted, except of such good marketable varieties as Wealthy, Fameuse, McIntosh Red, and, in the lake sections of the Province, Spy, Baldwin, King, etc. But when planting on a commercial basis, it is well to be guided by the advice of the most successful growers in one's neighborhood, but I prefer at this time to speak more generally of the orchard intended for the family's supply, with enough to leave a little surplus with which to help out on grocery bills occasionally. I would not buy from agents, especially such as we find throughout Eastern Ontario, as none of them are practical men, and usually know nothing about varieties or the care they require, and devote most of their talk to extolling the virtues of some novelty of which they know absolutely nothing except the write-up of some interested enthusiast. I would not plant new untried novelties, as they are generally humbugs. Better wait till our experimental stations have tested them, and when their reports are issued we will thank ourselves that we did not waste time and money as well as temper upon them.

I prefer to carefully make out a list of what I want, and send this list to a number of thoroughly reliable Canadian nurserymen, asking for their best quotations for strictly first-class stock, about two years old, stating clearly that I want no large overgrown culls or defective trees at any price. I would not waste postage writing to any but reputable nurseries, and I would buy from the one closest to me, other things being equal. I may have to pay in advance to get trees in this way, but it will pay many times over in the long run, as the nurseryman, having his own reputation to maintain, and knowing that there is no middle man or agent to blame for bad usage, will exercise more care, generally, with orders from direct customers than with those that come through agents. I would have the trees shipped direct to myself, by express, without it be an order of 50 trees or more, when they may be safely shipped by freight.

As soon as the trees arrive I would open the box or bale containing them and, taking the trees out, wet the roots well and heel them in nice soil, being careful that the soil is well worked in about the roots. If planting many trees, I would not set them closer than 30 feet, and if setting a large orchard of the large growing varieties like McIntosh Red or Spy I would set them 40 feet apart.

Large holes should be dug to admit the roots without cramping, and in digging the holes it is well to put the sub-soil in a separate pile from the surface soil. Then a little surface soil should be put in the bottom of the hole before placing the tree.

A very important item in the process of planting is the pruning of the tree, top and roots, before setting. The broken and badly bruised roots should be cut off, and the ends of all large roots carefully pruned off with a sharp knife to leave smooth wounds that heal more readily than rough and mangled wounds, and the healing process, callousing, causes the roots to throw out many fibrous rootlets which gather food and pass it up to the tree. Then it is advisable, and I have no hesitation in saying that it is necessary, in order to be most successful, that the tops be cut back to balance the loss of the root, caused by the digging. In fact I am a strong believer in severely pruning back the tops, believing that one will get much better growth and healthier and sturdier trees by such severe pruning than by leaving very much of the tops on when planting. The portion of the tree which is above ground, exposed to the wind and sun, is constantly evaporating

moisture, while the digging process has destroyed all the feeding cells on the rootlets, and no others are formed till growth begins, so that all the moisture that can be taken up to replace this loss by evaporation is what little may be absorbed by capillary attraction. Consequently where much top is left, especially in cases of scanty roots, there is a severe drain on the constitution of the tree before growth has rightly begun. I consider this cutting back of the top of very great importance, and in consideration of the large number of trees we see planted through the country where this has not been done, and that are in consequence in a greatly weakened condition, I feel constrained to emphasize this matter very strongly.

In setting the trees it is well, especially if planted in an exposed position, to lean them a little towards the south-west, as the prevailing winds from that direction tend to blow them over to the east, where they become set, making leaning trees, and besides, if leaned a little to the south-west, it helps to protect the trunk from sun-scald till the bark has become tough enough to withstand it and the trees in time have become straightened up.

Great care should be exercised that every bit of space about the roots is tightly filled with fine surface soil, to leave no air spaces. Each root should be spread out carefully in the soil. Put no manure or anything but good earth in contact with the roots, and when they are well covered, tramp the soil hard and throw a few shovelfuls on the top, which may be left loose. This care will pay the planter well, as a vigorous start in the young tree means much in after years.

I would grow my small fruits and vegetables in the young orchard, and the cultivation given such a crop will ensure good cultivation being given the trees the first few years, but I would discontinue cultivation by about the first of August, as far as possible, as late cultivation tends to promote late growth in the trees, and this late growth will not be well ripened up when winter sets in, and will consequently be injured, thus laying the foundation for black heart.

Personally, I like a low-headed tree, and would encourage, or prune the tree with this end in view, as the low-headed tree is much less subject to sun-scald or the effects of winds, and the fruit is much more easily gathered. These, in my opinion, are of greatly more consequence than the *ease* of cultivating trees that are trimmed so high that it is very difficult to get the fruit off without a rifle, and which are so high that the winds play havoc with the fruit and break the trees, and whose long, bare trunks are splendid objects for the destructive influence of sun-scald. With modern machinery, the cultivation of low-headed trees is easily accomplished.

In the colder sections of our Province, especially where such highly-colored apples as Fameuse and McIntosh are the leading apples grown, I believe it may be permissible to allow the orchard to be seeded to clover, and gradually go to grass, especially if it is not convenient to grow a cover crop among the trees, and the owner is prepared to do considerable mulching with manure. I am convinced from observation that the most highly-colored, and consequently most marketable, apples are grown in orchards in grass, with the trees kept well pruned, and the ground well enriched by mulching, and leaving the grass cut on the ground to help hold moisture for the trees. But I believe in commercial orchards, in general, it will pay to cultivate, discontinuing the growing of other crops when the trees have gotten well into bearing, and cultivating well for early summer, seeding down to a cover crop about the end of June to middle of July, and working this into the soil the following spring, either by shallow plowing, or the use of a strong disc harrow. The incorporation in the soil of this crop every spring furnishes a good amount of nitrogen and keeps up the humus in the soil, thus fortifying it against drouth.

The pruning of the tree, like the training of a child, is a very important matter, and should have the very careful attention of all planters, not only with grown trees, but with the young, newly set trees. A child is very young when not old enough to be corrected and taught obedience to parental authority; so a tree is very young when it will not be benefited by a little training, the cutting out of one branch, the shortening of another to leave a bud pointed in the direction a branch is desired to grow. We should also consider the natural habit of the variety we are pruning, endeavoring to correct the undesirable habits of the tree. I have no patience with the professional travelling pruners that have infested Eastern Ontario. Their practice is to visit the farmers, tell them their orchards need pruning badly, which usually is the case, and that they are experts in the craft,

Apple Orchard, showing the results of lack of care and injury from San José scale.

and can transform their old, neglected trees so the owners would not recognize them as the same trees, all of which is true. They procure the job, and proceed to slaughter these old, neglected trees in such a fashion as to break down their constitutions and cause their early death. Where trees have not been kept pruned, and have grown into a thick mass of branches, it is not wise to do much thinning in one season, and the breaking down of the balance between top and roots is sure to be very detrimental to the health of the trees. A gradual thinning of the heads, taking a number of years to get them to the desired condition, is much better. Thinning is best done from outside of the head, cutting out cross branches, and shortening branches growing in undesired directions, leaving terminal buds pointed in the direction it is desired that branches should grow, sparing a goodly number of fruit spurs along the large branches so that the crop of fruit in future will be

well distributed through the head of the tree, and that light and air can get through the heads to properly color and develop the fruit in the centres of the trees. The practice followed by professional pruners is usually to stand on the ground, and with saw or axe cut out the large branches they can reach, leaving large wounds that never heal, and denuding the centres of the trees of all foliage and fruit-bearing wood, so that as a result of their operations the tree is left to bear all its crop at the ends of the branches and the top of the tree, where the winds work havoc with it, and where it is impossible to pick the fruit properly. If a tree has been kept properly pruned it will have a goodly portion of its fruiting wood distributed all through the head, so that a good proportion of the fruit will be borne on the large branches that are strong and able to bear them. This pruning may be done in early spring, before the farmer's busy time begins. Pruning at this time allows the longest possible time for the healing of the wounds before the cold of the next winter. I would not cut out any large branches if it could be avoided, as the large wounds never heal, and are more or less of a drain on the vitality of the trees. If any large wounds are made, it is well to cover them with some substance, such as paint, to keep out the water and prevent the wood from checking. But if paint is used, it should be simply paint and oil without any spirits of turpentine.

Too many of our farmers look upon the orchard as of little consequence, and while they like the fruit it produces, they never calculate the value of the product from a financial basis, and consider that any labor spent on its care is just so much time wasted, while on the other hand, here and there all over the Province, we find men who are caring for their orchard and making more out of it than their neighbors are making from ten times as much land, and making it much easier.

And apart from the commercial side of the question, a well-kept orchard, producing abundance of choice fruit, that may be had without stint the year round, is of inestimable value in the rearing of the highest type of agricultural citizens. My heart often fondly turns to the memory of a few favorite trees in the old orchard in my parental home. These old trees and the splendid small fruit garden form a bond of affection for the old home that shall never in this life be severed. On the other hand, the farm that is devoid of orchard and garden is indeed unattractive to the youth, the future citizens, and the many farms throughout many sections of our Province where there is such a dearth of well-kept orchards leave little wonder that our youth should become discouraged with the monotony and lack of pleasures of rural life, and betake themselves to the city. If we wish to make this country truly great, and our sons and daughters the truest and highest type of Canadian citizens, we must advance the cause of agriculture in every possible way. It seems to me that there is no way of accomplishing more in this direction than in the building up in the minds of our brightest youths a high opinion of agriculture; in leading them to look upon this great business as of the greatest possible importance, and encouraging all those with any agricultural ability to follow this great business. And I can see nothing of greater potency in this direction than in making the home pleasant and attractive, and the maintenance of a good, well-kept orchard is one of the most potent agencies in this direction.

Q. At what season of the year would you prune your fruit trees?

A. This will depend on what we are pruning for. If to produce a strong, healthy, well-proportioned tree, we would prune at a season that will permit of the healing of the wound as quickly as possible, that is at the beginning of the growing season, or early spring. I would suggest that the farmer prune his orchard

just before his busy season begins. If, on the other hand, his trees are growing luxuriously, and not coming into bearing as he would wish, I would do at least a portion of the pruning about the middle of the growing season, in order to divert some of the food the tree has taken from the soil into the formation of fruit buds rather than wood growth. If a portion of the wood is removed, the plant food that would otherwise have been consumed by this removed wood will be utilized for the formation of fruit buds to a considerable extent.

Q. What varieties would you plant for a commercial apple orchard in Eastern Ontario?

A. Wealthy, Fameuse and McIntosh Red.

Q. The Wealthy drops its fruit too badly, and the Fameuse and McIntosh scab?

Apple Orchard, showing result of proper pruning, cultivation and spraying.

A. This is true to a certain extent, but when one undertakes apple growing on a commercial basis, as with anything else, he should give it his attention and endeavor to get, by proper care, all the profit he can out of the business. The Wealthy sets a tremendous crop of fruit, if left to itself, and nature causes the tree to drop the surplus, or what should have been picked off by the farmer, and if it did not do so, the tree could not possibly mature such a heavy crop and make fair-sized fruit of it. As soon as the fruit is well set on the Wealthy trees they should be thinned, to avoid overbearing, and this will give a better quality of fruit, a healthier and longer lived tree, and be much more profitable. The Wealthy comes into bearing so very early, and bears good crops of attractive-looking apples of rather good quality for late fall, that we consider it a very profitable commercial apple for the colder sections of the Province.

It is true the Fameuse and McIntosh scab pretty badly sometimes, if neglected, but the up-to-date orchardist sprays his trees, and if this is properly done the scab can be almost completely controlled.

There is, and will always be, a very large demand for high-class dessert apples, and there are no more attractive-looking dessert apples grown in the world than the clean, well-grown Fameuse and McIntosh Reds of Eastern Ontario. They are at their best about the Christmas holiday time, when the purse strings of the wealthy are loosest, and if they are extra well grown and nicely put up there is practically no limit to the demand. The area where these apples are grown to perfection is comparatively restricted, viz., the eastern and northern parts of Ontario and Western Quebec. Therefore, the large cities of this continent, as well as of England, will consume all the well grown fruit of these varieties that can be produced on the area named.

Q.—Would it not be more profitable to grow longer keeping varieties?

A.—Not in Eastern Ontario or similar climates. Such high-class winter apples as Spy, Baldwin, King, etc., will not succeed in our end of the Province, or in the colder sections of the western end. Varieties that do succeed, like Scott's Winter, Milwaukee, Northwestern Greening, and, in some places, Ben Davis, Pewaukee, etc., are as inferior to Spy, Baldwin and King, especially the Spy, that they are sold at much lower price and are consequently much less profitable. The Fameuse and McIntosh, especially the latter, if well packed and carefully selected, bring the highest price of any apple in existence.

Q.—But does the McIntosh Red not yield very light crops?

A.—If planted in very large blocks of solid McIntoshs they are usually light bearers, owing to the inability of this variety to fertilize its own blossoms. But if every second or third row is planted to some other variety blooming at about the same time, the McIntosh will then produce about as much fruit as the tree can be expected to bring to a high state of perfection. Its habit of distributing its fruit evenly through the tree gives it the power to bear a good crop without making as great a showing as the Fameuse or Wealthy. The McIntosh is an annual bearer also, so that it will bear as much as most varieties, if taken one year with another, provided the blossoms be properly fertilized.

Q.—What variety or varieties would you use as fertilizer for McIntosh?

A.—I believe the Wolf River is one of the very best varieties for this purpose.

Q.—You did not name Wolf River as a desirable commercial variety?

A.—I would not care to plant a great many of this variety. While they sell very well in small quantities there is a great danger of the general public becoming educated to a finer taste, and that there will be little demand for such coarse apples of poor quality. The tree succeeds well and bears very good crops of very large, showy fruit, but the quality is so poor that there is but a limited demand for them and likely to be less in the future. But I think that more might be grown than there are at the present time, and still find a profitable market. If one did not wish to risk planting Wolf River I believe he might safely depend on Fameuse. One of the most profitable orchards in Eastern Ontario, that of Dr. Harkness, of Irena, consists entirely of Fameuse and McIntosh.

Q.—What variety of strawberry is best for a farmer to grow for his own family use?

A.—This is a difficult question. What may suit one person best may not suit another, and a variety that may succeed well with one person on his soil, and with his method of treatment, may not succeed well with another, under his conditions.

Then, again, I think every person should plant early, medium early, and late varieties to extend the fruiting season as much as possible. I have no hesitation in recommending Beder Wood as an early variety, although Excelsior is a day or two earlier, but it is not so good a yielder, and is rather acid for a table berry. Then Splendid, Sample, Buster, and Uncle Jim are excellent varieties to extend the season with. Then I would add a row of Warfields for canning, and plant them beside the Beder Wood or Excelsiors, on the moistest ground available. The roots of the Warfields are short, consequently they do not yield well except on strong, moist soil. Owing to the dark color of the fruit, and the high flavor, they make excellent canning or preserving berries, but are too acid to make good table berries. If you have extra good soil, and are prepared to give good cultivation, and you wish to grow something choice in quality, I would plant the Marshal, Kittie Rice, Woolverton, New Buster or Ridgeway.

Q.—What would you recommend as commercial berries?

A.—Beder Wood, Lovett, Sample, Splendid, Marie, Pocomoke, Buster, New Buster, Ridgeway, and Uncle Jim, and on proper soil the Warfield.

Q.—What about the Williams?

A.—I would not plant Williams under any circumstances. While Williams has a fairly strong plant and is a very good yielder, the fruit is very subject to green hard tips, which makes them unsaleable in our market, and a few hours after they are picked they become very dull in color, giving them a very stale appearance. They are no better in any way than many of the above-named varieties, and not nearly so attractive in color.

Q.—What is the best raspberry to plant?

A.—The Herbert is by far the heaviest yielder; is perfectly hardy in any part of the Province; yields very large, attractive-looking fruit of very good quality. But owing to its recent introduction and the high price at which plants have been sold several unscrupulous dealers and so-called nurserymen have sold thousands of spurious plants—that is, plants of old, cheap varieties, labelled Herberts.

Q.—Where can they be obtained, with assurance of getting the genuine?

A.—I prefer to not answer that question, as we are not advertising for any nurseryman or nurserymen, but refer you to the Experimental Farm or Agricultural College, or the originator, R. B. Whyte, of Ottawa; and may say, that most of the best and most reliable Canadian nurseries have it now.

Q.—Why is it that we cannot grow plums any more?

A.—We can grow plums, and very successfully, if we plant the right varieties. Plums may be divided into four groups, namely, the Japanese, which are too tender for Eastern Ontario, but very young and heavy bearers of fruit of not very high quality where they do succeed. Then there is the Domestic or European group, which are hardier than the Japanese; in many cases the trees living to a considerable age, but the fruit buds do not stand our winter very well, being dried out by the cold winter winds. But there have been a few seedlings introduced from the Island of Montreal that promise better results. These are Raynes, Lunn, Mount Royal, and a few others of more or less promise. Then there is a variety called Latchford, that originated in the garden of Judge Latchford, in Ottawa, which gives promise of success. But the varieties sold by nurserymen in the past, such as Lombard, Moore's Arctic, Shipper's Pride, etc., are not hardy enough in the fruit bud for climates like we have in Eastern Ontario. Then there is the Nigra, or native Canadian wild plum, which in former years gave such enormous crops of fruit of the very finest quality, in many instances growing around in the fence corners and in out-of-the-way places. But in

recent years these have been affected by blight, which causes them to wither and drop off before maturity, so that we rarely find them yielding any good fruit. I cannot speak from personal experience, but it is claimed by such eminent authority as Mr. W. T. Macoun that spraying with Bordeaux mixture will prevent this blight, and I do know that a tree in our garden, after several years of total failure to ripen any good fruit, was thoroughly sprayed one season with simply cold water from a hose, and that year it yielded a fine crop of perfect fruit. The next year—a wet season by the way—it yielded a fine crop of the finest plums we ever used, with one thorough spraying. But where it is not convenient to follow any of these preventive measures, there is still the possibility of growing abundance of plums in the colder parts of our Province by planting the Americana or native American varieties, such as Hawkeye, Stoddard, Wolf, Wyant, Brackett, Admiral Schley, etc. These are perfectly hardy, very young bearers, often fruiting in the nursery row, and they bear exceedingly heavy crops every year. The fruit resembles our native plums in appearance and flavor, but are much thicker in the skin and ripen much later in the season. The rather thick, tough skin is the greatest objection to this type of plum, but for jams this does not matter so much. If the fruit is scalded the skin may be easily removed for preserving. Farmers of Eastern Ontario may plant this type of plum with every assurance of being able to grow large crops.

Q. Have you ever been bothered with black knot?

A. Not on plum trees, but I have on cherries. Where black knot appears, I cut out the affected branches as soon as they appear, and burn them. Do not leave the affected branches lying around, as they give off spores that spread the disease just as badly when lying on the ground as when on the trees. If trees are very badly affected, it will pay to cut them down entirely, and burn the whole tree. Such severe measures are necessary to eradicate the trouble.

SOME OF THE LAW AND GOSPEL RELATING TO NOXIOUS WEEDS.

T. G. Raynor, B.S.A., Ottawa.

The weed problem continues to be a live one in the Province of Ontario. Farmers are sometimes at their wits end to know what to do. Some cry: "More and stringent laws"; others, "Give us more and cheaper labor," while a few who have thought out the whole problem claim "They are getting along splendidly in the fight and are able to hold their enemies in check and drive them from their strongholds."

From time to time the Provincial and Dominion Governments have considered the problem of sufficient importance to enact laws to help prevent the spread of weeds. In the United States, too, many laws have been passed in the various States to prevent the spread of the Canada thistle, which was thought at one time to be the greatest curse the country could have. At present the farmers' eyes are focused on an even worse weed to spread, especially on clay soils, that is the notorious perennial sow thistle. The spread of most noxious weeds has been the result of ignorance or carelessness. At first the danger was not appreciated; but later on they widened their constituency and became a menace.

First, to those who say give us more law, it might be suggested that they examine the present ones to see if they have been used as effectively as they might

have been. Let us turn to Chap. 279 of the Revised Statutes of Ontario of 1897 and see what it has to hand out by way of machinery for suppressing noxious weeds.

On examination of these laws we find that the machinery for preventing weeds spreading from railroads, toll roads, electric roads and power line road allowances, or in fact any roads operated by companies, are quite effective. As a matter of fact most of the companies are making an honest effort to live up to them. Perhaps they do no better than they have to; but they are quite generally doing it, and doing it more efficiently, I regret to say, than the municipalities of the Province are doing it. To those whose business takes them on the public highways of the country, they must one and all acknowledge the culpable neglect that is everywhere manifested from end to end of the Province. The public conscience needs arousing on this question. It is time that here and there some attention be paid to this problem. In some cases it is effective, but in others very defective.

Most municipalities have passed a herd law which prevents stock pasturing on the roadsides unless herded or tethered. This has its uses and abuses. If sheep were more generally kept by farmers and they were allowed to run on the roads, they would do, successfully, the work of keeping down the weeds. Even in Essex, where there are many ditches on the roadsides for drainage purposes, farmers could scarcely object to sheep as they would not fill in the ditches like heavier stock and they would look after many weeds which are not only unsightly there, but help to fill in the ditches.

One municipality where the herd law is enforced sells the right for stock to pasture on the roads, and in this way weeds are largely kept in subjection. However, it should never be permissible for hogs to run the roads. In a few places the roads have been so graded that the roadsides have been seeded down with grass and clover and are sufficiently level for hay to be cut with a mower.

Under the present law relating to roadside weeds, the road overseers, or pathmasters as they are frequently called, are instructed by the municipality to prevent weeds going to seed in their road divisions. This requirement is outrageously neglected and something should be done next year to prevent a repetition of these conditions. One year's seeding may truly mean many years' seeding on highways.

The roadside weeds are very numerous in some places, but there are some kinds more common than others. Some kinds all too frequently seen are sweet clover (both white and yellow), chicory, ragweed, hound's tongue, elecampayne, teasel, burdock, milkweed, blueweed, ox-eye daisy, ribgrass, not to say anything about the different kinds of thistles and other minor weeds.

Roadsides which are torn up in grading or levelling should as soon as possible be seeded with grass, as weeds do not make much headway in a thick sod.

Weeds that are allowed to seed on highways spread to the fence corners, the adjoining fields along the roadways, the ditches and waste places. When neglected, they soon spread and eventually take possession of large areas of broken lands, or they give the farmers of that vicinity a good, hard fight to keep them in subjection.

On the Ontario statutes is an optional law which, on application of fifty ratepayers in a municipality, could be made effective by forcing the Council to appoint an inspector whose duty it would be to see that such weeds as the above-mentioned are not allowed to go to seed in neglected places. This law might be amended so that it would be compulsory for Councils to appoint at least one weed inspector who could be paid so much per day to visit the farmers of his municipality, advise them of the noxious weeds growing on their farms, the best methods for destroying them most effectually, and whose powers could be extended to cover the extraordinary case of the perennial sow thistle so that even where crops would be jeopard-

ized the inspector might order or cause to be cut certain fields of grain badly infested with sow thistle before the seeds ripen. This would meet the case of careless and indifferent farmers who allow the sow thistle to seed in quantity each year. There are now some five noxious weeds specified by the law, see Chap. 279, Sec. 2, which it is obligatory for farmers to prevent going to seed, whether owners or occupants of land or waste places, fence corners, etc., viz.: Canada thistle, ox-eye daisy, wild oats, ragweed, and burdock. With the purity of seeds the Ontario statutes deal as well. See Chap. 279, Sec. 9 (2), where it says in effect that any person who knowingly sells or even offers to sell any small seeds or seed grain which contain any of the weed seeds of the following plants, viz.: Canada thistle, ox-eye daisy, wild oats, ragweed, burdock or wild mustard, is liable to a fine of not less than $5.00 or more than $20.

Even the smut question is dealt with, for in Sec. 9 (4) it says in effect that any person who knowingly sows grain affected with smut, without properly treating that seed to kill the smut spores, is liable to a fine of not more than $20.00.

These laws if enforced, it must be acknowledged, would awaken a great interest in the subject, and possibly rebellion. Yet our lawmakers at one time thought them quite necessary. Everyone knows how seriously they are taken.

With a view of checking the spread of noxious weed life throughout the Dominion the Seed Control Act was passed in 1905, which offers the opportunity to a farmer of buying reasonably clean seed from seed merchants and dealers in seed generally.

Inspectors have been appointed in the different Provinces to visit the places where seed is so offered, to see if the law is being carried out. Where seed is suspected, samples are taken in presence of the vendor and forwarded to the Dominion Seed Analyist, who reports on its quality. If found wanting, the offender is proceeded against in the courts. If a seller got such seed from a wholesale seed merchant, the blame is thrown on him in the court by the retailer and later on the wholesaler is fined.

Sometimes it occurs that farmers themselves are offenders. Five such cases have already been dealt with in the Province, where they were offering red clover seed with more weed seed impurities in it than the law allows, viz., 5 per 1,000, which means that in the seed so offered there were more than 1,450 noxious weed seeds per pound, to say nothing about weed seeds like foxtail, trefoil and lady's thumb, which are quite sure to be present in quantity as well.

While 5 per 1,000 is the limit of noxious weed seeds that may be sold in samples of timothy, alsike, red clover or alfalfa for seeding purposes as fixed by Sec. 8 of the Act, Sec. 7 fixes a standard for those farmers who wish a better article which may be sold as No. 1.

That standard requires in the four small seeds in most common use by farmers (1) that not more than 5 noxious weed seeds per oz., or 80 per lb. may be sold in timothy, red clover or alfalfa, while 10 per oz. is allowed in alsike or 160 in a lb. (2) Not more than 1 per cent. of weed seeds of any kind is allowed. (3) 90 per cent. of the seed must grow. This may be banked upon as very good seed. No farmer who wishes to keep his farm clean or comparatively so, or who is in the fight to get his weeds under control, should sow a lower grade of seed than No. 1. This he can find out without any cost to himself by sending representative samples, about one ounce in quantity, to the Seed Branch, Department of Agriculture, Ottawa, for a report on its purity. If more farmers who are not experts in detecting weed seeds did this there would be less labor needed afterwards in weeding out their meadows. When a farmer desires to buy seed grain from dealers he should be on

the lookout for labels giving the names of such noxious weed seeds as may exist in the samples, if there are more than one per cent., as is required by Sec. 6 of the Seed Control Act.

During the year the Seed Branch employed 26 instructors to drive out along the side lines and concessions in as many counties, talking with as many farmers as they could reach how best to get rid of certain weeds in their clover seed crops, which if left would pollute the seed. This work was found to be extremely useful, and it will likely be enlarged upon another year. Some of the information these instructors were to get was the opinion of farmers as to the use of Nos. 1, 2, 3 and rejected for grades in the seed trade. The opinion was generally favorable to this proposition and it is likely that the Seed Control Act may be amended to conform to this idea. Last year some useful amendments were made in the addition of Sec. 8*a*, which deals with the vitality of all farm, field root, garden and vegetable seeds. It is now necessary for seedsmen to mark the percentage vitality of seeds on the package offered, where it falls below two-thirds the standard for the germination of such seeds. For instance, if corn which, when standard, germinates 95 per cent., were to fall below 60 per cent., a label must be put on the package, giving that information. The wisdom of this is apparent. A farmer who is compelled to purchase low vitality seed can double the usual quantity he plants or sows to secure a good stand. To those who complain of the scarcity of efficient labor it may be suggested that they plan to hire a man with a family by the year, and engage in a line of farming that will pay him to employ such help. If not in a position to do that he might sell part of his land and work the rest to better advantage, or he may increase the size of his fields and use the modern, up-to-date implements requiring a three or four-horse team, so that the work may be done more thoroughly and expeditiously, as very many are doing to-day, much to their own satisfaction. A short rotation in which clover, hoe crops, smothering crops, as buckwheat and millet, and summer-fallow if necessary, will usually put the farmer who keeps plenty of stock—among them a flock of sheep—in a class with those farmers who say that weeds are not bothering them these days.

It is a splendid thing to be free from worry of all kinds, but especially from worry of weeds, which is said to have worried one good German farmer in Waterloo County so much that his mind gave way. That is taking the weed problem too seriously, yet there are some who are not as yet viewing the question seriously enough, and to such are these words addressed.

INSECTS ATTACKING THE APPLE.

LAWSON CAESAR, GUELPH.

CODLING MOTH.

Everybody has seen wormy apples, and recognizes that the insect which causes them, the codling moth, is one of our worst orchard pests; in fact, it is the cause of more loss to apple growers than all other insects combined. About twenty five per cent. of the apples of Canada are attacked each year by this insect, and rendered unfit for market. This means an annual loss of not less than $2,000,000. This is a great loss, and it is gratifying to know that experiment after experiment has shown that it can nearly all be prevented by a single thorough application of poison at the right season of the year. To understand how this is possible, we must have some knowledge of the life-history of the insect itself.

LIFE-HISTORY.—The codling moth passes the winter in the worm stage, in a little cozy nest in some good hiding-place, such as under the loose bark of trees, or in crevices, or in cracks in the walls of fruit-houses. When the warm spring weather has come, the worm undergoes a great change in appearance, and turns into a little, glossy, brown, cigar-shaped creature, known as a pupa. After remaining in this stage for a few days, it changes into a pretty little moth, as shown in Fig. 1. Only a very few moths appear as early in the season as the time of the blossoming of the apples, by far the greater number not emerging until a couple of weeks later, and some not until the end of July, or even later than this. This long period during which they continue to emerge accounts for our finding worms in all stages of development throughout the summer, even where there is only one brood. The moths themselves are very seldom seen during the day. They lay their eggs singly on the leaves and fruit, from 30 to 80 eggs being laid by each female. In from seven to fourteen days these hatch out, and the little worms seek the fruit, though sometimes they feed to a small extent on the leaves before reaching it. Once they have got to the apple, they hunt for an easy place to enter. The easiest they can find is the blossom end, or calyx, as we shall now call it. Here they readily work their way in among the tiny leaflets, feeding as they go, and gradually eating their way down into the pulp of the apple. It is

Fig. 1.—Codling moth. (Natural size. After Slingerland.)

very important to know that by far the majority of worms enter by the calyx end. This year 66 per cent. were found to have entered apples at this place, and 90 per cent. entered pears there. After remaining in the fruit from 20 to 30 days they are full-grown, and leave the apples, which in most cases have ripened prematurely and fallen. In all parts of Ontario as cold as Guelph, all but a very few of the worms now seek a hiding-place under the bark of trees, or in crevices, or other sheltered spots, and remain here over winter. In more southern and warmer parts, however, a large percentage remain only about twenty days in such places, during which time they go through the pupal stages, and then emerge as moths to lay eggs for a second brood of worms. This second brood, wherever it occurs, is very destructive. In the districts south of a line from Toronto to about Sarnia the majority of the worms transform into moths and produce this second brood; but above this line it is seldom that we find more than 3 to 10 per cent. of a second brood. The worms of this brood also pass the winter in hiding-places in the ordinary manner. Such is briefly the life-history of the codling moth.

SPRAYING.—This is the only reliable and, in some districts, the only practicable method of controlling the insect.

When to Spray.—It is found that the little calxy leaflets, as seen in Fig. 2, remain open for about a week after the blossoms fall. Now, as it is at the calyx that the great majority of the worms enter the apple, the object of spraying for the codling moth is chiefly to cover every part of the upper surface of the calyx with a coat of poison, so that when it closes, as seen in Fig. 3, the poison will be inside, and destroy every worm that tries to enter here at any time in the summer. The poison that gets all over the surface of the apple at the same time will kill so many of the worms trying to enter by the sides that very few will be left; and if we kill practically all the first brood, there cannot be a sufficiently large second brood to cause much loss. Hence, directions are to begin to spray as soon as the blossoms are nearly all off the trees. Unless the whole orchard is sprayed inside of one week, or ten days at the most, after this it will be too late, and the pest cannot be controlled that season.

Poison to Use.—Use two pounds arsenate of lead to forty gallons of water, or preferably to forty gallons of Bordeaux of the strength of two pounds blue-

Fig. 2.—Apple blossoms, showing the calyx leaflets open.

stone, two or three pounds fresh lime and forty gallons of water. This is only half the ordinary strength of Bordeaux. In place of Bordeaux, commercial lime-sulphur of about the strength of one gallon to thirty or forty of water, may be used. By using either of these mixtures with the arsenate of lead, we help to keep the apple-scab also in check. Paris green may be used in place of arsenate of lead with Bordeaux, but not with lime-sulphur. Use one-quarter pound to forty gallons of the Bordeaux.

How to Spray.—Use a fairly coarse nozzle; one of the Friend type (Fig. 4) is very satisfactory. Two of these nozzles at the end of a V give an almost ideal spray. Place a brass elbow (Fig. 4), with an angle of 45° between the end of the extension rod and the V, or of the nozzle itself, if only one nozzle is used. This elbow can be obtained for twenty cents. Some such device as this is a necessity to enable the sprayer to send the poison directly into the calyx cavity. Use high pressure, preferably 150 pounds, and not lower than 100 pounds. Hold the nozzle fairly close to the calyx, from 20 to 30 inches, if possible. For high trees

use a tower to spray from. Do not leave a tree until it is certain that you have covered every calyx thoroughly. This means that if there are many blossoms the tree will have to be drenched. Eight gallons is none too much spray for a good-sized tree of 30 or 35 years of age.

In very badly infested orchards, in warm districts, where there are two broods, it may be necessary to give a second application of the poison three weeks later, which is the time when most of the worms are just hatching out. This application need not be so heavy, but every apple should be covered all over with a fine mist. One spraying, however, is sufficient in more than 90 per cent. of our orchards.

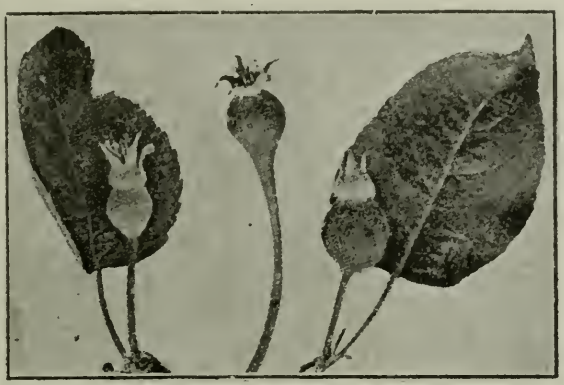


Fig. 3.—Apple blossoms, showing the calyx closed.

Means of Control.—(1) Birds: Woodpeckers search out large numbers of the worms under the bark in winter and devour them. Anyone who shoots our downy or hairy woodpeckers is, therefore, doing great injury to fruit growers.

Fig. 4.—Spray nozzle, Friend type.

(2) Sheep and Hogs: If these animals are allowed to run in the orchard in sufficient numbers to keep the fallen fruit eaten up, they will do much to lessen the number of worms, because the great majority of worms leave the fruit only after it has fallen. They will not, however, completely control the pest, because a considerable number of worms leave the apples before they fall from the trees.—Courtesy of *Farmers' Advocate.*

THE GROWING AND IMPROVEMENT OF THE CORN CROP.

A. P. McVannel, B.S.A., M.S., Picton.

Corn as a crop for fodder and ensilage is comparatively well known in the Province of Ontario, and is destined to come rapidly into more general use. There are few, if any, farmers in the Province whose profits would not be materially increased by raising several acres of corn each year. The aim of every farmer should be to produce, as far as possible, sufficient feed for his own stock upon his own farm.

During the last few years the area devoted to corn in Ontario has greatly increased, and it is reasonable to predict that there will be a greater increase throughout the Province in the next ten years. However, when we consider the value of the land upon which the large majority of our farmers are growing corn, the high price of labor and the difficulty of obtaining the same, the main problem is to increase the yield per acre. Anyone familiar with the corn crop and who has carefully studied type and quality in corn and the relation these factors bear to production cannot help feel and realize that a very large number of farmers all over the Province are growing corn inferior in type and breeding. The possibilities for improvement of the corn crop are many and the assertion may be safely made that improvement in corn may be more easily brought about than with any other cereal crop.

The United States have spent immense sums of money for investigation and improvement of corn. As a result, the yields in every State have increased; but as yet no maximum yield has been attained, but it is possible for us to take some lessons from the States across the line and apply them to our own circumstances with profit to ourselves.

The question which confronts us is, What baleful influence reduces our average crop is less than 78.8 bush., or 11.68 tons, per acre?* One of the main influences lies in the quality of the seed we use. To this influence too little attention has been given.

In past years, and to a large extent at the present time, much of our seed corn has been obtained from the States to the south. A large proportion of this seed is not adapted to the conditions prevalent in Ontario and oftentimes such seed is of very poor quality. The northern United States were at one time confronted with a similar condition of affairs, but they adopted a plan of growing their own seed corn and breeding varieties adapted to each locality. At present these States are in the lead in the growing of corn. But we have to do with Ontario and the average farmer knows that it is possible and practicable to grow our own seed corn. This has been thoroughly demonstrated by the Ontario Seed Corn Growers' Association of Essex and Kent and by many farmers all over the Province.

The greatest trouble with the seed corn in Ontario is that it does not grow as it should, and what does grow does not produce as it should. The failure of the corn crop is by no means entirely due to the soil and weather conditions. Numerous tests made from samples of seed corn which were afterwards planted demonstrated that the seed lacked vitality. Twenty-three samples of seed corn were sent in by farmers and collected from dealers who were selling corn for seed. These were carefully tested in the spring of 1910 at the Department Office in Picton. In

*Bureau of Industries, 1908.

one case all but 9 per cent. failed to grow, while the best samples tested only 90 per cent. This is merely one instance of many experiments which have been conducted and shows clearly that the germinating power of the seed corn sold and planted in the Province is very weak.

The tendency of corn growers during later years has been to plant Ontario-grown seed and much improvement in the crop is the result. Care in the selection of seed cannot be too pointedly emphasized. Seed corn should be thoroughly ripened on the stalk, if it is not it will lack vitality. Seed corn should be thoroughly dried before severe freezing. It will not do to leave it in a pile on the floor of a warm room while it is fresh from the field or it may mould or even sprout. The practice of storing seed corn in bags, boxes, or barrels at any time should be condemned for the reason that it is likely to gather moisture enough from the surrounding air to spoil the germ. If the seed is damp when husked it should be thinly spread in a cool, airy place and when well air-dried and before severe freezing it should be hung up or piled on open racks in a well-ventilated room that is kept warm with fire heat. Many growers are successfully practising this method of selection and curing their own seed corn. They select enough of the best ears from the best stalks in the field and dry these in the house, very often over the kitchen fire, in the furnace-room, or sometimes in the sun in the open. Of these methods, the only one advisable is to dry in the furnace-room. The air of the kitchen is invariably laden with moisture and steam, consequently the purpose of drying is defeated. Drying in the sun and open air is not sufficient in view of the large amount of moisture contained in corn. Especially is this the case with the sweet corn. The lack of some practical, effective means of drying and curing is the greatest objection to the practice of every grower saving his own seed corn. However, after all is said and done, there is no reason why each grower cannot select and save his own seed corn from his own field. This phase of improvement will be dealt with later on as we wish at this time to consider the testing of the seed.

One thing is certain, that whenever purchasing seed corn or saving it from the field it should always be on the ear. In this way a better idea can be had of the quality and purity of the seed. Too much attention cannot be paid to this important part of the work if we are to obtain maximum yields of corn. The amount of time required or involved in testing the seed is trivial when we realize that it is possible for one man to test sufficient seed for twenty-five acres in the short time of ten hours. When we consider that an acre of corn planted 3 ft. 8 in. apart in the square will require from twenty to twenty-five fairly good-sized ears, it will be apparent then that to test each ear will require but a few moments. There are several methods of making the test, but for the average grower the following method has proven very satisfactory, viz.: Make a box 38 in. by 27 in., fill with fine, saturated sawdust and pack as solid as possible. Then mark the box off into squares each 2½ in. by 2½ in. These squares may be made by running cord crosswise of the box. It makes a more satisfactory tester if a sheet of cotton is nailed on top of the box and the squares marked and numbered on the cotton with an indelible pencil. However, the main thing is to have the squares numbered and distinct. The next operation is to lay the ears out on a table and number them to correspond with numbers in the tester. Next, take six kernels of corn from each ear, taking one kernel from each side about an inch from tip, one kernel from each side of centre and one from each side of ear about an inch from butt. Place these kernels in the square which corresponds with the number of the ear from which they were taken. When the tester is filled, cover with damp cotton

cloth of similar nature to the one below the corn, and thoroughly moisten. Place cover tightly on top and set in a warm place, 45 degrees to 50 degrees F. will be about right. Dampen again at end of second day and count the number of kernels which have germinated. In the event of one kernel failing to germinate in each square, or where any of the kernels show only a weak germination, discard the ear. This test, if carried through with care will give a definite idea of the vitality of the seed. A similar and very satisfactory tester is illustrated in Fig. 1.

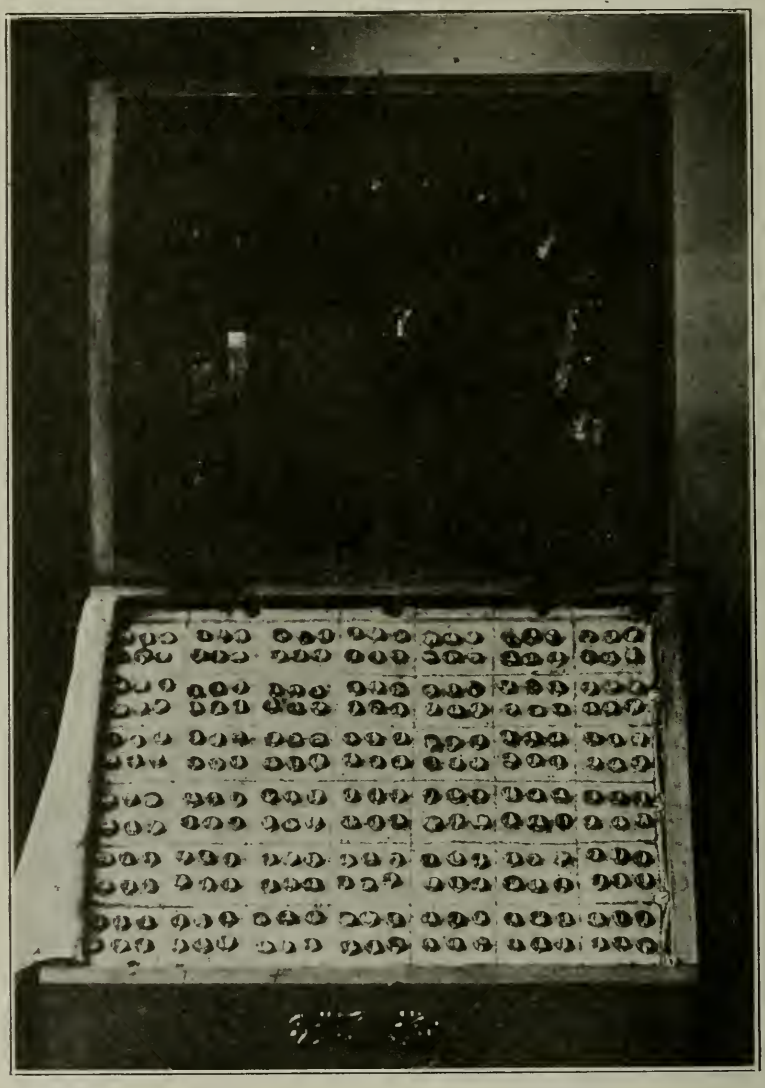


Fig. 1.—Testing the germination of Corn.

The next important problem that the grower has to meet is, How may he improve the variety of corn he is growing and eliminate the weak, barren, and unproductive strains from the seed corn? I believe that this can be done only by breeding these defects out of our seed corn and increasing its productiveness in the same way that we have improved every kind of live stock on the farm, and that

is by eliminating the unproductive and imperfect individuals. I know of but one way to do this in the case of corn and that is for the grower to raise his own seed corn in a seed plot intended for that purpose.

The seed plot need not be a large one, possibly one-eighth of an acre would be sufficient if well cared for. It should be located at least one-quarter mile distant from any other variety of corn, in order to prevent cross fertilization, but the average man will not take the time nor trouble to undertake the extra inconvenience and expense of providing such a special plot, in which case an easier though not so effective a plan would be to set apart one side of the main field from which to select the seed corn. The preference should be to select the plot on the south or west side of the field, or at least on the side farthest from the direction of the prevailing winds. Also, by following this method the grower would evade danger of contamination from his neighbors' fields and will not become mixed from crossing with the pollen from the other varieties.

In the spring select from the seed which has been saved a number of the best ears for the seed plot and plant each ear in a separate row. There is not much extra work in doing this and any grower will be amply repaid for the trouble. Now cultivate the seed plot in the best possible manner or just the same as with the other corn and watch it grow. At the time the silks first appear, and just before the tassels show any of that yellow dust that they bear at this time, go through the seed patch and break the tassels from every stalk that does not show signs of producing a good, big ear. In this way one may do a great deal towards eliminating the unproductive tendencies. The seed plot should be carefully watched throughout the summer and the rows compared one with another. The difference between them will be surprising. Let the seed patch thoroughly ripen before cutting, harvest each row separately and compare the product one row with another. Select the very best ears from the very best row to plant the seed patch with next year, using the best ears from the rest of the patch for your regular crop or to sell.

The fault with the common plan of selecting the best ears from the regular crop for seed is that the good, big ear, while having in its parent stalk a good mother, has in it also the tendencies of the unproductive stalks because its silks were fertilized more or less by the pollen from the tassels of these unproductive male plants. Now, do not get the idea that you ought to send off and get some supposedly superior corn to start with, and if you do this for your main crop you are taking grave chances. Every farmer should raise his own seed corn, but if he has to buy seed corn he should go to the best corn raiser in his neighborhood and buy of him the best he has; but never buy seed corn after it has been shelled. In buying shelled corn, how does anyone know what kind of ears it grew on? There is altogether too much temptation and tendency among salesmen to select seed corn with the "scoop shovel," when seed corn sells for upwards of $2 per bushel and common corn may be bought for 50 to 75 cents per bushel. Every farmer who has to buy seed corn should demand having it on the ear and be willing to pay the extra price necessary to get it in that shape.

The reason that every farmer should raise his own seed corn is that the corn adapts itself to its local surroundings, to the climate, to the length of season in that particular locality and to the soil.

Potato growers tell us that their crop is improved by changing the seed, but such is not the case with the corn plant, and after it has adapted itself to our soil and to our season why should it not do better by us year after year? unless we run it out by getting extreme earliness at the expense of size and vigor, or by producing

nubbins and small stalks by improper culture and breeding them into our crop instead of away from it.

The objection may be raised that it will not pay to do so much unnecessary work just to get enough seed corn to plant a few acres. It is true that it does not require a great quantity of corn to plant a large field—one bushel of shelled corn will usually plant seven acres. The yield of corn can easily be increased to the extent of 15 bushels of grain or five tons fodder per acre by proper selection of seed.

The second important factor in the production of a corn crop is the culture. This includes the preparation of the seed bed, the planting and the cultivation. Conditions of soil and climate vary to such an extent that no fixed rules can be given regarding the depth and time of plowing, disking and harrowing. The preparation of the seed bed, however, should be such as to provide in fullest measure moisture, heat, and air, which are absolutely essential for the germination and healthy development of the seed corn. A large number of experiments have been

Fig. 2.—Breeding Plot. This plot is separated from the main plot, so that cross fertilization may be prevented.

made to secure valuable data regarding such important points as the distance apart of the hills, the number of stalks in a hill, and hilling *vs.* drilling. All of these items contribute in part to the success or failure of the corn crop, but here again so many conditions enter into the problem that we can do little more than call attention very briefly to two or three facts which may prove valuable as guide posts to the corn grower who would profit by the accumulated evidence of many investigators.

Year after year the trend has been to increase the number of hills and to decrease the number of stalks in a hill. There are good reasons for this change from planting three feet ten inches wide, or even wider, to three feet six inches wide or less. Two and three stalks in a hill give a maximum yield and the ears are usually larger and more fully developed. In addition, a three-foot-six-inch planter drops three thousand five hundred and fifty-six hills per acre, or three hundred and sixteen hills more than a three-foot-eight-inch planter. If each hill produces two well-developed ears, this represents an increased yield of six or seven bushels

per acre. Drilling is very often practised on rich, new land quite free from noxious weeds. Under these conditions an increased number of stalks per acre give very satisfactory yields. However, when grasses and weeds threaten to seriously interfere with proper cultivation of the drilled corn, it always proves best to adopt the hill system. A series of experiments at the Illinois Station, repeated with different soils, varieties of corn and seasons, show that the average yield for the two systems is practically the same. In view of the great advantage in favor of hilled corn during the period of cultivation, we must grant that it is the most practicable system for nearly all conditions.

We cultivate corn to kill weeds, to improve the physical and chemical conditions of the soil, and to conserve the moisture. Careful plowing and dragging and harrowing improve the physical conditions of the soil by making it finer and looser, thereby affording a larger feeding area for the roots of the plant. Chemical improvement is brought about by admitting a larger quantity of air into the soil. The amount of water used by the corn crop during the growing season is enormous. An idea of the total moisture needed is gained from the fact that three hundred and ten pounds of water are required for every pound of dry matter.

During the hot summer months, the period of least rainfall, the growing crop requires the major part of this vast quantity of water, and it is during this time that the great reserve supply of moisture in the soil finds its way to the surface by capillary attraction and evaporates rapidly. Now, the point is, will the corn grower permit this loss of water which sustains such a vital relation to his crop? He need not permit it, for this evaporation can be retarded by stirring the surface of the soil and keeping it light and porous, the loose soil serving as a mulch. The pores in this soil are too large for capillary action and the moisture fails to reach the surface. The corn grower, then, must cultivate more frequently and less deeply too, as we know that while killing the weeds he may preserve the moisture for the corn roots and spare the corn roots to gather the moisture. Many successful corn growers have found it very profitable to continue cultivation after the corn is too high for the regular two-horse cultivator. They go between the rows with a one-horse cultivator or drag while the ears are setting and thus maintain a dust mulch late into the season.

SILOS AND THEIR CONSTRUCTION.

To-day the up-to-date dairymen and beef-raisers are studying the best ways and means by which they can produce a maximum profit at a minimum cost. They are devoting their time to selection of sires for their herds, to the individual cows in their herds, to the housing of the animals, to the sanitary conditions surrounding their premises, and to the feeding and care of the animals.

While all these are of great importance, yet the question of supplying the most desirable kind of food has been for a long time an item of serious consideration with the average farmer. During the months of July and August when the pastures become dry and the food short, we find that the flow of milk falls off very considerably, and the young stock becomes checked in their growth. Some farmers have resorted to the feeding of grain during this period. This is an

expensive method, and affects very materially the profits at the end of the year. Others, again, have found it wiser to grow some kind of soiling crop, such as alfalfa, corn, rape, oats and peas, etc. This is a very wise course to pursue. Crops of this nature can be grown near the buildings, and fed at a very small expense. More than that, they are foods of a succulent nature, and tend to keep the cattle in a thrifty, healthy condition, thus enabling them to digest their food better, and incidentally produce a larger flow of milk, or more rapid gain in weight.

During the winter months the farmer has another problem to face. After years of experience in feeding all kinds of live stock it has been found that our stock will thrive better when fed on a succulent ration. For years this portion of the ration was supplied by feeding roots. However, with the increased cost and scarcity of labor, this method has been practically abandoned. For a time many of our farmers grew corn and kept it in shocks in the field until such time as it was needed. This method gave very good results, but was attended with more or less labor and inconvenience. The corn being exposed to the elements was diminished in feeding value and palatability. Later on, the silo was instituted. For some years the latter method of storing corn and other green crops was looked upon with an eye of suspicion. Many of our prominent feeders, and even those at the head of our agricultural institutions, were loath to advocate its use.

The general impression seemed to be that animals fed upon silage would have their digestion impaired, and become more susceptible to diseases or organic disorders.

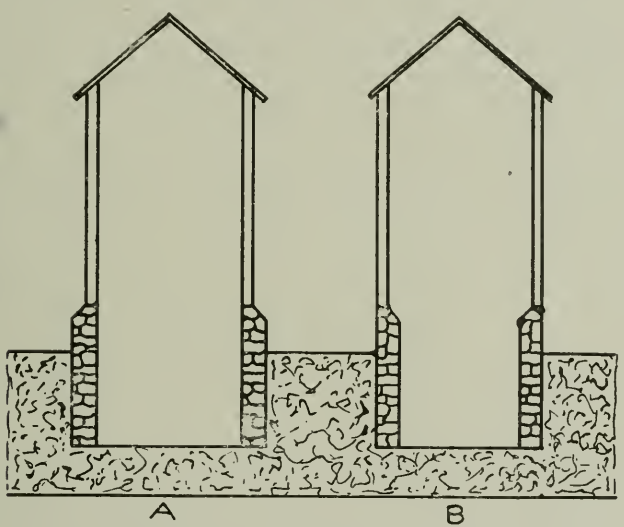
The first silo in Ontario was built in 1881 on a farm near Woodstock. It was very simple in construction. J. N. Chambers, the owner of the silo, had the good fortune to see one in New York State, and he became so convinced of its merits that he decided to try the experiment for himself. Not wishing to go to any great expense he used one of the bays in his barn for this purpose. The walls were carefully sealed to exclude the air, the latter being the main and practically the only object. The great difficulty with this silo was that it lacked in depth. The pressure was not sufficient to make its silage compact and air-tight. To overcome this difficulty boards were placed on top of the ensilage, and weighted with stones. The stones answered the purpose, but were somewhat difficult to remove after the corn had settled. However, when the time for feeding ensilage had arrived, Mr. Chambers was rewarded with a cheap food, and a food that was relished by the stock.

Strange to say, the farmers were not very quick in adopting the silo as a means of supplying succulency to their ration. However, a few became interested, and were induced to build what is known as the square frame silo. All the old silos are of that type. They are still being used, but are not all that could be desired. The main objection to this type of silo is that it is difficult to get the walls rigid. The pressure to the square inch is so great that the walls are sprung, and the air is admitted, the result being that the silage near the edges becomes decayed, and the balance sour. Silage of this kind is not palatable, and very much lessened in food value. More than that, the walls are made of boards, two-ply, with paper between. The dampness from the silage causes the boards to decay, making it rather expensive to keep in repair, as well as providing another means of letting in the air, which always results in poor silage. The popular type of silo to-day is the circular; in fact, with the exception of a few octagonal silos, they are the only kind being built.

Essentials of a Silo.

There are several points which must be closely observed in making silage if it is to be well preserved, and the neglect of any one of these will ultimately result in the difference between success and failure. Although we have silos of various types, yet the primary object is the exclusion of air in order to prevent decay. To prevent air from reaching the silage, the silo must have tight walls. These must be rigid enough not to be sprung out of shape by the pressure of the silage, and thus preventing air to enter next to the wall. Not only the walls but the doors must be perfectly air-tight. To accomplish this, great care should be taken to have all joints broken and made more perfect by the use of tar-paper or some such material. Not only should the walls be tight and rigid, but they should also be perfectly smooth on the inside to permit the silage to settle without forming in pockets, which will cause a portion of the adjoining silage to rot.

The wall inside the silo should be even with the foundation, as indicated in (A) of illustration. Note, where a shoulder is formed, as in Figure B, the pressure on the silage is relieved to a considerable extent. This results in an accumulation of air, which causes the silage to decay.



Cross section of two silos, showing the right and the wrong way to place a silo on its foundation.

Proportion and Capacity of Silos.

If silage is to be fed with the greatest satisfaction it must be sweet and in perfect condition. Fermentation is caused by the silage coming in contact with the air, therefore the silo should not be of too great diameter. In this connection we take the following extract from Bulletin No. 102, University Illinois:

Not more than eight square feet of surface should be allowed for each cow in winter, then, when feeding 40 pounds of silage per cow, a layer about 1½ inches deep would be fed off daily. When silage is fed in summer it is advisable that the exposed area be not over half this size so that a layer three inches deep may be used daily. However much stock is to be fed, a silo 20 to 22 feet in diameter is as large as should be built. If a silo is of greater diameter than this, much of the silage is at too great distance from the door, increasing the labor of removal.

The deeper the silo the greater the pressure and the more compactly will the silage be pressed together, hence the larger the amount that can be stored per cubic foot. For example, a silo 20 feet in diameter and 40 feet deep will hold twice as much as one of the same diameter and 25 feet deep. This shows the economy of reasonably deep silos. To be well proportioned the height should not be more than twice the diameter. No silo should be less than 30 feet deep, and to get sufficient depth for a silo not over 12 feet in diameter it may be placed 4 or 5 feet into the ground.

The number of tons of silage needed can readily be estimated from the size of the herd and the amount fed daily. Even where it is desired to feed as much silage as possible not more than 40 pounds per cow should be fed daily. In Illinois, silage will usually be needed from about October 20 to May 10, or 200 days. Each cow should have an allowance then of 200 times 40 pounds, which is 8,000 pounds of silage, or four tons per cow for the year. A herd of ten cows will require a silo holding 40 tons; a herd of 30 cows, 120 tons; 50 cows, 200 tons; and 100 cows, 400 tons. Where young stock is raised an allowance should be made for them. From the amount of silage needed the dimensions of a silo of the required capacity may be determined from Table 1, which gives the capacity in tons of silos of different diameters and depths. These estimates apply to silos filled with well-matured corn that has been allowed to settle forty-eight hours and then refilled. It is evident that to get this rated capacity a silo which has been filled rapidly must be refilled after settling forty-eight hours.

APPROXIMATE CAPACITY IN TONS OF CYLINDRICAL SILOS OF DIFFERENT DIAMETERS AND DEPTHS. COMPUTED FROM KING'S TABLE.

(The diameter is shown at the top of the columns and depth at the left.)

	INSIDE DIAMETER IN FEET.												
Depth, Ft.	10	11	12	13	14	15	16	17	18	19	20	21	22
20	26.2	31.6	37.7	44.2	51.2	58.8	67.0	75.6	84.7	94.4	104.6	115.3	126.6
21	28.0	33.8	40.3	47.2	54.8	62.9	71.6	80.8	90.6	100.9	111.8	123.3	135.3
22	29.9	36.2	43.0	50.5	58.6	67.4	76.5	86.4	96.8	107.9	119.6	131.8	144.7
23	31.9	38.6	45.9	53.9	62.5	71.7	81.6	92.1	103.3	115.1	127.5	140.6	154.3
24	33.8	40.9	48.7	57.2	66.3	76.1	86.6	97.8	109.6	122.1	135.3	149.2	163.7
25	35.8	43.3	51.6	60.5	70.2	80.6	89.6	103.6	116.1	129.3	143.3	158.0	173.4
26	37.9	45.9	54.7	64.2	74.4	85.5	97.2	109.8	123.0	137.1	151.9	167.5	183.8
27	40.1	48.5	57.7	67.7	78.6	90.2	102.6	115.8	129.8	144.7	160.3	176.7	194.0
28	42.2	51.1	60.8	71.3	82.7	95.0	108.1	122.0	136.8	152.4	168.9	186.2	204.3
29	44.4	53.7	63.9	75.0	87.0	99.9	113.7	128.3	143.9	160.3	177.6	195.8	214.9
30	46.6	56.4	67.2	78.8	91.4	105.0	119.4	134.8	151.1	168.4	186.6	205.7	225.8
31	48.8	59.1	70.3	82.5	95.7	109.8	124.9	141.1	158.2	176.2	195.2	215.3	236.3
32	51.1	61.9	73.6	86.4	100.2	115.1	130.9	147.8	165.7	184.6	204.6	225.5	247.5
33	53.4	64.6	77.0	90.3	104.8	120.5	137.8	154.6	173.2	193.1	214.1	235.8	258.7
34	55.8	67.5	80.3	94.3	109.3	126.0	142.8	161.6	180.8	201.7	223.6	246.2	270.0
35	58.2	70.4	83.7	98.3	114.0	131.6	148.9	168.7	188.3	210.5	232.2	256.8	281.5
36	60.6	73.0	86.9	102.2	118.3	136.3	154.7	175.9	196.3	219.4	242.0	267.5	292.1
37	63.1	76.0	90.4	106.1	123.1	142.1	160.8	183.2	204.3	228.0	251.9	278.4	303.9
38	65.5	79.0	94.0	110.3	127.9	148.0	167.0	190.7	212.4	237.2	261.9	289.4	315.9
39	67.9	82.0	97.3	114.5	132.8	154.0	173.5	198.3	220.6	246.5	272.0	300.5	328.1
40	70.3	85.1	101.1	118.8	137.8	160.1	180.0	205.0	228.9	255.9	280.2	311.8	340.4

Foundation.

The foundation should have sufficient area of footing, or width at the base of the wall, to prevent settling when a load is placed upon it. It must be understood, however, that the weight of the silage is held principally by the floor. In cases of stone or cement silos, the base of the foundation should be about two feet, whereas a stave or frame silo would only need a 12-inch foundation. In building the foundation some builders simply dig a circular trench and fill it with cement and stone. A better plan, however, is to excavate the dirt from two to five feet below the feeding floor of the barn and build a good wall beginning at the bottom of the excavation. This will add greatly to the capacity of the silo and repay you for extra cost involved. The most satisfactory foundation is made from stone and concrete. To build this it is necessary to have a mould into which to pour the cement. This can be made of 2-in. by 4-in. scantling and half-inch lumber in the following manner: After the excavation is completed a stake is set solidly in the exact centre of the silo, a circle the same size as the interior of the silo is next drawn on the bottom of the excavation. This can be done with a string as long as one-half the diameter of the silo, one end of which is attached to a marker, the other being fastened to the centre stake. Stakes made of 2x4 scantling are set up at intervals of two feet on the inside of this circle and firmly braced to the centre stake. These stakes should be as high as the foundation is to be. The half-inch boards are then placed around the silo, and nailed to the stake to form the inner side of the mould. A spirit level should be used to get the boards perfectly level at the top. If care has been taken in making the excavation, the wall of earth will serve as the outer side. When the mould is completed, broken stone or common cobblestone is laid in the bottom of the form, and a mixture of concrete is poured over them. The concrete for the purpose should be mixed with enough water to allow it to flow. Not more than six inches of stone and cement should be put in the frame at one time, and care should be exercised to make the concrete fill all the spaces between the stones.

If the foundation is carried above ground, an outside form similar to the one on the inside should be built for the portion above the surface. To prevent cracking of the wall it is well to put pieces of scrap iron, wire, etc., in the masonry. Such a foundation 4 ft. in height for a silo 16 ft. in diameter will cost from $25.00 to $35.00, depending largely upon the distance it is necessary to haul the gravel, and the cost of the cement.

Drainage.

The subject of drainage varies greatly in its importance, depending upon the location, or the nature of the soil surrounding the silo. We should always try to have our silo high and dry, but in cases where this is impracticable the question of drainage should not be overlooked. Again, any soil will support a greater weight when dry than when wet. This is especially true of clay. The heaving action of frost is due entirely to the moisture contained in the soil, which expands with an almost irresistible force upon freezing. For this reason, if for no other, unless the soil is very dry and open, a drain should be used to carry away the surplus moisture.

Floors.

There is a great difference of opinion among farmers as to whether or not a floor is of any advantage to a silo. Some have had excellent satisfaction with-

out a floor, while in some instances the floor has been an utter failure. However, generally speaking, it is well to have a floor. Where cement floors have failed it was due largely to want of drainage. There is always more or less liquid formed due to the pressure of the silage. If it is not allowed to escape it becomes sour and lessens the value of the silage. Therefore, wherever it is thought advisable to put in a floor, an opening should be made in the centre leading into a drain. This will enable the surplus juices to escape and ensure good ensilage. Floors may be dispensed with if the soil is firm, and where the foundation is deep enough to prevent undermining by rats. It is well, however, to put a few inches of cut straw over the floor before filling the silo.

Doors.

The openings or doorways have always been a much discussed question in silo construction. The two main considerations are: (1) That they fit tightly, in order to exclude the air. (2) That they do not weaken the wall or cause it to spread, thus ruining the building. The majority of silos being built to-day have a continuous door. This style of door is very convenient for emptying the silo, yet, when the strength of the silo is considered it seems to resolve itself into a question of individual preference. In any case, two-ply boards should be used for making doors, taking care to break all joints. Tar paper or some other heavy building paper should be placed between the boards and on the edges. The pressure of the silage will assist greatly in keeping these boards in place, and incidentally the exclusion of air. Doors on hinges are very objectionable in that they swell and cause a great deal of trouble in getting them open or properly closed.

Ventilation.

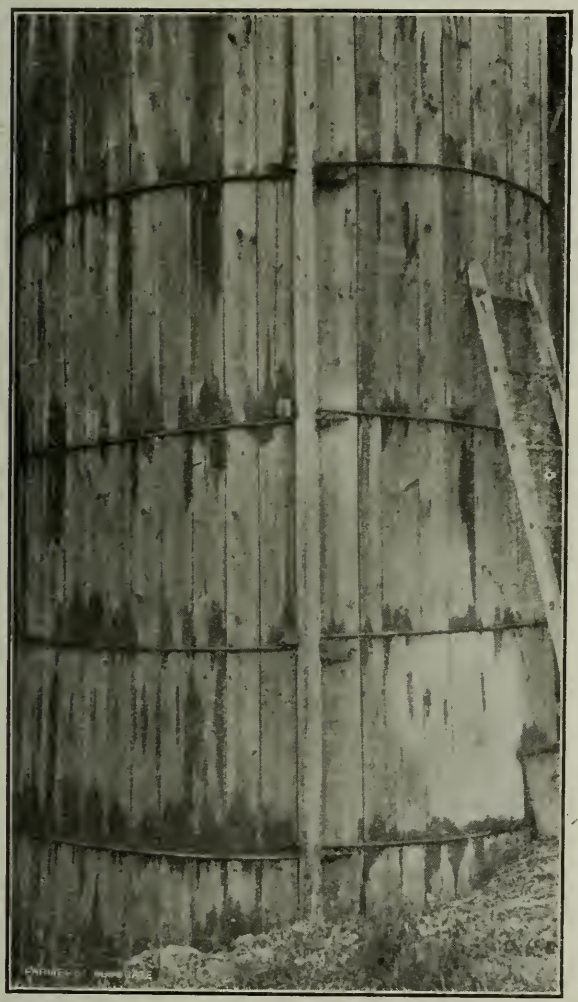
Although the majority of silos are either supplied with ventilators or left open to the weather, it is doubtful if they are of any value. Air is one of our greatest enemies in making silage. We should try to have as little air circulating in the silo as possible. Carbon-dioxide is a by-product resulting from the fermentation of the silage, and will collect in large quantities if not allowed to flow off. This may be done by keeping the door sealed on a level with the silage. This gas is heavier than air and will not support combustion. It is wise to test a silo before beginning work with a lighted match. If the match refuses to burn, it is not wise to enter the silo until the blower has been working for sufficient time to stir up the air.

Forms or Types of Silos.

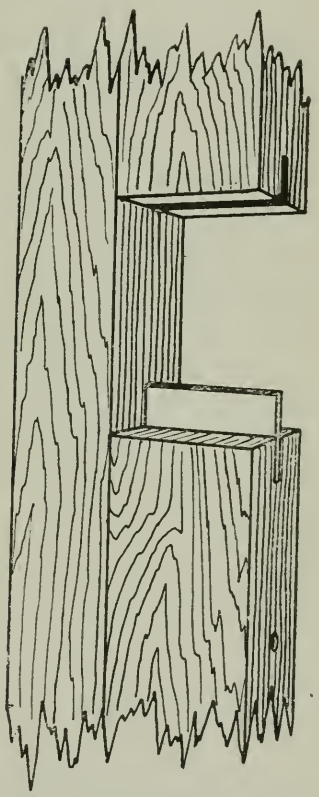
With very few exceptions the square silo is practically out of use. They were used quite extensively for a time, but it was difficult to get them sufficiently rigid. The corners were also objectionable, making it almost impossible to exclude air. The next in order was the octagonal silo. This type is undoubtedly superior to the square, yet it had its faults, the main one being the number of corners. The round silo is now being built almost exclusively. It presents several advantages which make it superior to either the square or octagonal: (1) It contains the least amount of waste space. (2) It possesses greater strength, equal pressure being distributed throughout. (3) In the question of capacity it requires less material for a given area.

STAVE SILOS.

The stave silo is undoubtedly the cheapest when considered from first cost, but when the question of durability is considered, it is doubtful whether they should be strongly advocated. At the present time there are a great many being built; so much so that several firms are making a regular business of manufacturing and shipping them all over the Dominion. In many instances the staves are treated with a preservative which increases their durability. However the



Common Stave or Tub Silo. Note the 4-inch by 4-inch studding used for holding the hoops in place. The durability of this silo could be increased by raising the staves off the ground.



Showing how sections of staves are spliced together endwise.

prices charged for these silos are quite high, which makes it all the more in favor of the cement silo. Yet, where a farmer has the lumber and is reasonably handy with tools, he may justly use the stave silo to advantage.

The foundation of a stave silo need not be very thick, as the only weight which it has to carry will be the walls, yet it should be substantial and built with

an eye to keeping out rats and frost. As a rule two staves are used to give the height of the silo. If so, saw the ends of the staves so that a strip of iron sheeting about two inches wide and as long as the stave is wide may be inserted one inch in the end of each stave to hold them together, and prevent the end from springing. (See illustration.) The staves should be of hemlock or some durable wood. It is well to have them dressed on each side, and especially on the inside. If left rough on the inside it will interfere with the settling of the silage and incidentally its quality.

Hoops should be made with a 5/8-inch iron with a thread from 8 to 12 inches in length. To help tightening it is well to have the hoops in three sections. Iron blocks are quite often used for passing the ends of the rods through, but it is preferable to use three pieces of studding 4x4 at regular intervals. When the rods are passed through the holes in the studding, washers should be used to prevent the nuts from entering the wood. The studding adds greatly to the strength of the silo and overcomes the difficulty in getting the hoops to remain in place.

In silos two staves high the staves should be of two lengths, and the larger and shorter should be placed alternately in the construction. The lower course of staves should be placed first. They may be held in place by nailing on strips diagonally and joining the staves, or by stapling to the hoops, one hoop about five inches from the foundation, and the other at the top of the shorter stave. The staples should not be driven in full length, but loosely to permit further adjustment. Each stave should be kept perfectly perpendicular. The first stave should be plumbed and securely stayed before the others are put in place. Set the staves about one inch from the inner circle of the foundation. To relieve the danger of the silo shifting its position bevel the angle on the top of the wall with cement, also cement the outside along the top of the wall.

The first three hoops should be about 18 inches apart, the distance increasing gradually to about three feet at the top. Once the lower portion of the silo is constructed and properly adjusted it should be a simple matter to put the remaining staves in place, and tighten up the hoops.

Doors.

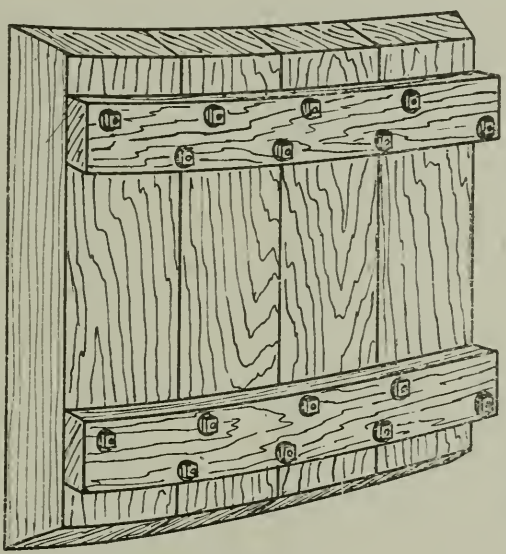
Before the staves are put in place it is necessary to decide how many doors the silo should have, so that a door stave may be prepared. When this has been done, the location of the door is laid off on a stave, and saw cuts are made half way through it. The cuts should be made at a slant of about 45 degrees on the edge of the stave. The cut at the bottom of each door should slant downwards from the outside to the inside of the stave; and the cut for the top of the door should slant upwards. When the staves are being put in place, the door stave should be at the side where the doors are to be cut. It is well to nail a slat on one side of the door stave until it is put in place to prevent any danger of breaking. When the construction of the wall is finished, a saw may be inserted at the points where the staves have been partly sawn and the other staves may be sawed through to secure a door of the desired width. The pieces sawed out should be used in making the doors. Two cleats 2 or 3 inches wide and long enough to reach across the door may be sawed with proper curvature from 2-inch plank, and firmly bolted to the sections of the staves before they are sawed out.

Continuous Door.

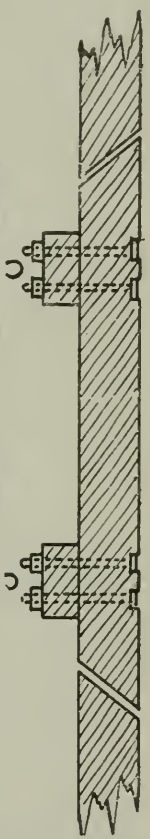
Generally speaking, a continuous door is not found in a stave silo, but may be if desired. This form of door is possibly a little more convenient than doors

at intervals, but decidedly more difficult to construct. For a door of this kind a frame should be made of 4-in. by 6-in. timbers, which are kept 20 inches apart by means of bolts passing through the posts and pipes as shown in the figure. Iron washers should be placed between the ends of the pipe and the timber to prevent the pipe from sinking into the timbers. When the door frame is complete it should be put in position, plumbed, braced, and used as the first stave; the others being arranged on either side. The door posts should be flush with the inside of the staves. On the outside they will project beyond the staves and holes should be bored in these projections to permit the hoops to pass through.

Stave partly cut through for doors.



Door for stave silo.



A cross section of a silo door.

The doors are made of two thicknesses of one-inch boards, grooved and tongued preferred, with tar paper between. A cleat is nailed on the edges of the door posts about two inches from the inner side for the boards to rest upon. The weight of the silage will keep the boards in place, provided they have been tacked as they are put on.

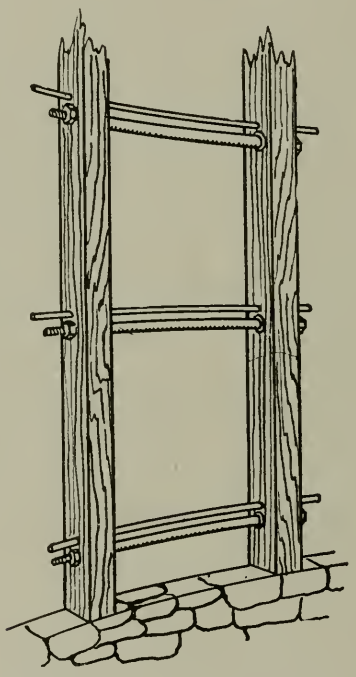
Roof.

It is not necessary to have a roof on any silo, in so far as the keeping of the silage is concerned, but a roof adds greatly to the appearance, and very materially to the durability of a stave silo. One of the worst features of a stave silo is that

the staves become dry during the summer, and either become loose or warp. The roof will assist greatly in keeping the sun out, in keeping the silo moist inside, and in keeping the staves in place. Therefore, though the first cost may be materially enhanced, yet the satisfaction and increased years of usefulness will well repay you for the outlay.

Mr. G. A. Brethour's Stave Silo.

Whether for dairy or beef cattle, the food that on account of its excessive yields can be grown the most cheaply, on most Ontario farms, is corn. It makes a grand foundation for any ration, be it prepared for dairy cattle, beef cattle or young stock. The greatest problem in the past has been to store in large enough quantities to supply the demands upon it by all classes of farm stock. If left



Opening of continuous door for a stave silo.

shocked in the field it quickly deteriorates in value when the rains begin to beat upon it, making it less valuable chiefly through its lack of palatability. If placed in the barn it must be very carefully handled to prevent total loss from fermentation. In short, the silo seems to be the only way of solving the problem of great storage capacity, ease of handling, increased palatability, and freedom from waste.

While there are many types of silos the important point for every farmer to consider is the matter of owning a silo of *some* kind. The question of kind of silo to be built can be left, generally speaking, to each man's individual circumstances and requirements. Some who have two or three silos of different construction claim the cheap stave silo the best, as it can be removed or enlarged, etc., at little loss. However, where a farmer has his buildings of modern con-

struction, and wishes to give a touch of permanency to his farm structures, the cement block, or solid wall, silo will suit him the best.

The silo I recently constructed at "Hill-Crest" is a combination of these two, being a 13-foot cement wall, topped with 28 feet of staves, making a 41-foot silo 12 feet in diameter. I took advantage of my barn being a bank one to get a good height without making it difficult to fill. Directly at the end of the feeding alley I dug a hole 14 feet in diameter and 10 feet deep in the bank. I then set one row of curbing (the staves later used in construction) at about one foot from edge of hole. As the bank was very hard I merely packed in cement and cobblestones between this curbing and bank to make this 10 feet of wall. Above ground I used three feet high of cribbing, making my wall 13 feet high of cement. This was carefully plastered on the inside with strong cement. Four inches from the inside of the wall I left a ledge 3 inches deep, on which I placed the first row of staves. After the silo was completed I bevelled the projecting cement so that silage would settle perfectly at junction of staves with wall. In constructing the stave part I used three 2x4 studding, 28 feet long, through which hoops were tightened. Joints were broken by matching a 16-foot stave alternately with a 12-foot, and two staves were connected by a hoop iron 3 inches wide in ends of staves. It would also add permanency to the silo if staves were dowell-pinned in constructing, but I did not think of it at time of building. Any silage remaining for summer feeding is perfectly preserved in cement part of silo underground, and on account of construction of stables is not inconvenient to get out. I did not, on account of difficulty of placing tile drain from same, place any concrete bottom in silo, as soil was very hard and gravelly, and I thought the natural drainage would prove satisfactory. This part of the construction has proven very satisfactory, as silage kept perfectly, right to the ground. I have seen silos with concrete bottoms where silos had about two feet of spoiled silage. In no case should bottom of silo be concreted without making allowance for drainage.

The cost of this silo, 41 feet by 12 feet, with an additional 9-foot roof, including labor with exception of hauling gravel, was $126.75. The staves were hemlock, and with staves at $17 per M. and cement at $1.75 per bbl., were very moderate. Cedar, pine, spruce, etc., would do equally well. I know of nothing for the same outlay that makes the farmer so independent of winter's cold and summer's drouth as a well-constructed, well-filled silo.

CONCRETE SILOS.

The concrete silo has passed the experimental stage. It is now considered one of the best, if not the best, kind of silo for the farmer to construct. The main objections to the concrete silo are (1) the cost, (2) the concrete walls permit a transfer of moisture and air through the walls, (3) the walls, in many instances, will not withstand the pressure of the silage, (4) the acid of the silage softens the walls, and (5) the cement draws the frost. While it is quite true that this silo is expensive, yet it is equally true that it will outlast—provided it is properly constructed with good material—a silo constructed of any other material. While it is quite true that a concrete silo is more or less porous, a coating of pure cement both inside and out will overcome the objection of the air and moisture. Walls properly reinforced with rings and made of the proper material will—provided they have sufficient thickness—withstand all the pressure required of them. Very

little trouble has been experienced with the walls becoming soft due to the acid in the silage. The drawing of frost is probably the main objection to the cement silo. Being a good conductor the silage freezes on the edges, and is much slower in thawing than when in silos with thinner walls. However, this is not very objectionable as very few have reported any inconvenience due to this fact.

The building of a concrete silo means the expenditure of considerable money. Therefore, you should use every precaution to have it properly constructed, and the best materials used. Failing in either of these you will have unsatisfactory results. To mix cement properly and to estimate the proportion of sand, gravel

Cement Silo. This is the type of silo that our most experienced dairymen are advocating.

and cement requires experience. The work should be turned over to a concrete contractor under a guarantee that a first-class silo be built. There are, of course, many farmers who have had experience in using cement, and who are quite capable of building a good silo, yet we wish to warn those without experience not to attempt to build one without at least someone who has had experience to oversee the work. Although there are a number of double-wall silos being built, the single wall is most common, and more easily constructed. The thickness of walls of silos varies from 6 inches to 9 inches at the base, and from 4 inches to 5 inches at the top. A 9-inch base seems to be the most desirable for the average-sized silo. The double wall overcomes the objection of the frost, but it is quite difficult to construct, and requires special forms or moulds.

Making and Handling the Cement.

Only first-class cement should be used. The proportions of cement and gravel will vary with the grades of gravel, but as a rule one of cement to five of gravel will give good satisfaction—one to four is rather expensive. Some use one of cement to eight of gravel, but it makes the wall too porous for the best results. Broken stone may be used instead of gravel, if available and cheap. A high-grade concrete must be made from clean, sharp sand and gravel, and the cement must be in proportion as to fill all the intervening spaces between the sand and gravel.

Another essential of good concrete is thorough mixing before moistening. Every particle of sand and gravel should be thoroughly coated with cement. Add enough water to make the mass quiver when tamped. The tamping should be thorough as it tends to bring the particles into immediate contact.

In adding to the work of a previous day, thoroughly wet it, sprinkle cement on the hardened surface, add about two inches of concrete, and tamp thoroughly. The latter should receive careful attention in order to avoid a poor union, and a subsequent air leakage or crack which might form. While the concrete is drying it should be sprinkled in order to keep it moist and enable it to set firmly.

Reinforcement.

Owing to the excessive pressure brought to bear upon the walls of the silo, it is considered a wise precaution to reinforce with wire, bars, rods, etc. Special rods may be procured from the blacksmith, or they may be made from fence-wire. Simply weave several strands of wire about the length of the circumference, join the ends together and place it in the centre of the foundation. These circular reinforcements should be about 18 inches apart at the base, increasing to three feet at the top, or better still place them about two inches from the top and bottom of each door.

Mr. Karn's Silo.

Mr. H. H. Karn, Woodstock, writes in part as follows: In writing you about my silo I might say that I was always opposed to a silo until lately. Being a director of a cheese factory for the last 18 years, I noticed that our best patrons were the ones which had silos, so last year I decided to build one. I will give you a brief description of the one I built.

It is of cement, 14 ft. by 40 ft. The first thing I did was to dig a drain around the outside, about two feet from the foundation and about one foot below the bottom of the wall. We then dug out the earth for the foundation, which is two feet wide at the base. The wall at the ground level is one foot wide. The outside ring was taken in one quarter of an inch every course until we finished at the top with the wall 8 inches thick. We then plastered the wall inside and out with cement, asbestos and fine sand, which makes it air-tight. An iron ladder was erected on the outside to put up the pipes when filling the silo.

It took 45 yards of fine gravel, 15 loads of field stone and 36 barrels of cement to build the wall. The plastering took two barrels cement, 150 lbs. ground asbestos and one load of fine sand. The builders charged $2.50 per foot for building, and found all labor and a horse to draw up concrete. It cost, when finished, $225.00. I do not want to boast, but for a cement silo I do not see how it could be improved on without it was a protection against frost, although we had no damage or trouble last year.

Cement Silo.

Mr. W. E. Thompson: My silo is built of cement from bottom to top. We dug a trench 2½ ft. wide and down to hard soil. We used cement mortar and large stones to make a foundation, having it level at top of ground so as to set our steel rings on level. The size of my silo is 40 ft. high and 14 ft. across inside. The walls are 9 inches at bottom and 6 inches at top. The material required to build this silo was 50 barrels of cement and 50 yards of fine gravel, using no stones above the ground. It is reinforced every 15 inches with a wire rope made of four strands of No. 9 wire twisted together and placed in centre of cement. Eight bolts were placed in top of silo to bolt the rafters to, and thus save making a wooden circle for rafters. The cost of material is as follows:—

50 barrels of best cement at $1.45	$72 50
50 yards of clean gravel at 15c	7 50
400 lbs. wire	9 00
Labor charged for plastering	5 00
Labor charged for building	77 00
Total	$171 00

The builder found all necessary scaffold and rope. It takes three men about nine days to complete a silo if the weather is fine.

Place your silo in the most convenient place possible both for filling and feeding. See to it that you have the drain a little deeper than bottom of trench to carry off any water that might collect. The bottom of the silo should be of earth shaped like a plate, and just before filling place a layer of straw thereon. A floor of this kind allows any extra juice in corn to escape and does not sour the silage in the bottom.

For filling we have a 13-horsepower engine and a blower box requiring only one good day to fill. We help one another to fill as there are about 20 silos close at hand and more going up (mostly cement).

We have not had one forkful of spoiled silage so far. It does freeze some around the wall, but this does not spoil the silage if fed as soon as it thaws out.

A roof should always be put on a silo to keep our friend the sparrow from eating all the corn and leaving the cobs for the cows.

STEEL SILOS.

The much-talked-of steel silo has not been in use for a sufficient length of time to estimate its true worth. It undoubtedly has several advantages over the cement silo. The item of gravel hauling, which is often considerable, has not to be considered. The simplicity of erection is in its favor. It can be erected in any weather and easily added to if desired. If the foundation is properly constructed it will not settle or crack; it is perfectly air-tight, water-proof, and fire-proof. We also learn from those who have had experience with them that they keep the silage perfectly, and that they have no difficulty whatever with frozen silage.

However there is one difficulty which has not as yet been thoroughly overcome. The acid of the corn acts upon the wall, causing it to rust. This will, undoubtedly,

shorten the usefulness of the silo. Numerous preparations have been tried, but as yet no satisfactory solution of the problem has been found. The manufacturers supply what they term an "acid-proof paint," but a number complain that it rubs off after the first year.

This silo has many merits and will, undoubtedly, become a popular silo; in fact, it already has many admirers. However, it has not been in use for sufficient length of time for us to recommend its use without some hesitation. The question of durability is the only one that seriously presents itself; when this objection has been removed, we will have a very satisfactory silo.

The following are extracts from letters *re* steel silos:

Mr. W. P. Niles of Wellington writes in part as follows: Replying to yours of the 19th regarding steel silos, would say that I put up one last year from the Waterous Engine Works Co., 14 ft. in diameter and 35 ft. high, erected in July upon a cement foundation 5 ft. in the ground, which makes the silo altogether 40 ft. high. Put on a steel roof which came with the silo, and the ensilage is keeping perfectly.

We did not use any until it had been in the silo over a month, and there was a few inches which we had to throw off the top; since then we have not wasted a forkful, nor have we experienced the slightest difficulty from freezing.

I have never had any experience with silos of any description, but have heard people talk about the freezing in cement silos, but this has been a mild winter and of course I presume that there has not been much freezing in any silo in this section. I cannot see anything wrong with my silo, and were I building another, which I may possibly do next summer, it would be a steel one.

Mr. W. F. Rudell, Esquesing, writes in part as follows: I have had experience with wooden silos and I would not build one, as I have helped three of my neighbors to re-erect theirs which had been blown down.

My steel silo, 12 ft. in diameter, cost me $4.50 per foot, including angle iron, rivets, doors and special paint for inside. I paid the freight and the Waterous Engine Works gave me 7 per cent. off for cash. Now, as a 30-ft. steel silo would cost about $126.26 with discount allowed for cash, it would take four men about two days to rivet it and a stonemason one day to build the foundation with stone and cement. I have not put any roof on it as yet—the cost of a steel roof would be $45. The cost of a 12-ft. steel silo without roof would be(for cash):

30-ft. silo by 12 ft.	$126 26
4 men, 2 days at $2.00	16 00
1 mason, 1 day at $3.00	3 00
Freight	7 50
Cement for foundation	3 00
Board for men	6 75
Total cost	$162 51

I have not allowed for drawing steel silo home from station or allowed anything for stones and for foundation.

My neighbor built a cement one 14 ft. in diameter, 30 ft. high (no roof), and the cost of his silo for a firm to build it was:—

30-ft. cement silo by 14 ft.	$165 00
5 men for 6 days' board	22 30
40 yards of gravel at 25c	10 00
Hauling 40 yards, at $1.00	40 00
Cost of 5 wooden doors	1 25
	$238 55

Now, as for the keeping qualities of the silage, the two compare favorably with one another, only at the doors of the cement silo it seems black and rotten, but with the steel doors it is as good as anywhere else. After corn was put in the silo I took pure cement and plastered around the doors, making it air-tight. In my steel silo, where the *special mixed paint* is put on, *it has rusted a little,* but I intend giving it another coat before the corn goes in again.

In the steel silo it has not frozen any around the sides. It did freeze a little on top before I started to use it. My neighbors' silage has not frozen either. By keeping the sides lowest it does not seem to freeze. We have our silos on the sunny side of the barn.

I would advise building a cement silo if properly built, but it should be plastered on the inside and outside and washed with pure cement to give it a gloss to prevent moisture from soaking through and making it air-tight, as a cement silo is not air-tight without a wash.

Mr. W. C. Good, Brantford, writes in part as follows: I have had a cement concrete silo since 1902 which has given good satisfaction. The only difficulty I have is due to its location on the north side of the barn. In prolonged cold weather the silage freezes to the walls. This frozen silage can be left, however, till a warm spell comes, and can then be detached.

Last summer I built a steel silo because, in the first place, I could not get gravel conveniently, and secondly, because there seemed less probability of trouble from frost (it is situated on the south side of the barn), and, thirdly because I rather wished to try an experiment. I may add to these a fourth reason, viz., that a steel silo can be built with much less work than a cement one, and I was rather pressed for time.

My steel silo is 12 feet in diameter and about 32 feet high (2½ feet of cement foundation and 30½ feet of steel). It has a roof of galvanized iron on a wooden framework. The total cost, including labor, was about $200.

The only real difficulty in connection with a steel silo is that of protecting the iron against the corrosive action of the silage. I made a number of enquiries in regard to this point before building, but could get no information that was authoritative. Consequently I determined to make some experiments. Through the Waterous Engine Works Co., who supplied the steel, I obtained several kinds of paint which gave promise of satisfaction. First I tried them severally on small pieces of sheet iron, and then concluded to try one tar paint, made for coating boilers, ship bottoms, etc., and two asphalt roofing paints, to the inside of the silo. These paints were applied in vertical strips, and two coats were put on. One of the asphalt paints (containing a little linseed oil) did not dry very quickly, and for part of the second coat I applied an asphalt "lap cement" (containing no linseed oil) as a second coating. The painting was all done between two and three weeks before the silo was filled, but the asphalt paint containing the oil never got hard;

the other paints seemed to be quite hard. On three sheets of galvanized iron to be buried in the silage I applied samples of two graphite paints and a mixture of red lead and oil.

The protection of the inside was a total failure, which I attribute almost wholly to the fact that the heat of the silage softened the paint and in settling the corn wiped practically every bit of it off the iron. No special damage is done yet, as there is only a thin coating of rust on the sheets, but something will have to be done during this next summer. I am rather at a loss to know what to do, but one clue or suggestion accidentally came to me from the fact that I put tar paper over the doors as an extra precaution. In several places this tar paper has been pressed into the sticky paint so that it adheres very firmly to the walls, and on the inside gives a dry, smooth surface, along which the corn settles easily. My idea is to get something stronger and thicker than tar paper (say a thin rubber roofing felt) and apply it to the walls over a coat of the sticky asphalt paint. One possible difficulty suggests itself, viz., that the paint will soften and the felt be brushed down and all puckered up by the settling of the silage. If, however, the job is done early enough in the summer this difficulty could be minimized.

The problem of protecting the inside of the silo is still, as far as I know, unsettled. But, apart from this, the steel silo is strong, handsome and likely to be durable, and, of course, the wall being air-tight keeps the silage in first-class condition. I would not, however, advise an intending builder to use steel rather than cement if gravel could be got at all conveniently. A cement concrete silo, if properly put up, is eminently satisfactory and has stood the test. The steel silo, on the other hand, is quite an experiment and does not wholly commend itself to those not fond of venturing in untrodden paths. Nor is it sufficiently cheaper than the cement to be distinctly preferable on the ground of cost. Personally, however, I do not regret making the experiment, because I cannot lose much financially and I have an interesting problem to help work out in the protection of the inside against the silage. The mental satisfaction may be some compensation for the risk involved.

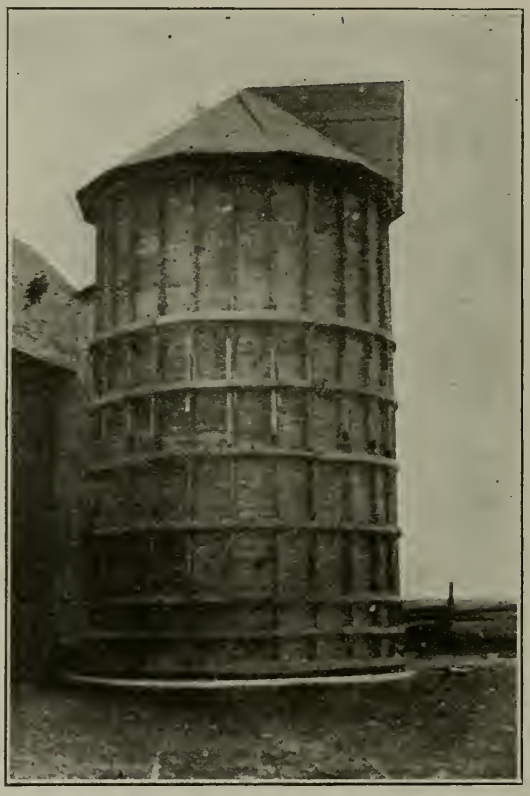
CIRCULAR FRAME PLASTERED SILO.

This type of silo is new to many sections of Ontario, yet it bids fair to become very popular. It is cheaper than the cement, and overcomes very largely the objections raised against the stave silo. Having a double wall, making a dead air space, there is less trouble from frost. It is also more rigid and less liable to damage from the sun, etc., than is the stave silo. The inner wall being plastered with cement makes it air-tight and capable of keeping silage perfectly. Although the cement silo is always preferred, yet where good sand and gravel is hard to procure this type of silo may be used with every satisfaction. Farmers who have had experience with both types of silos consider the frame plastered silo quite as good as the cement.

The foundation for this type of silo is the same as previously described. The sill is made of 1-in. boards, 5 in. wide, cut so as to form a circle of the required size and imbedded in mortar. The studding is made of 16-ft. scantling, 2 x 4, set on the sill and toe-nailed to it. A large post 16 ft. long is set on the ground in the centre of the excavation. As the studs are put in place and plumbed they are held in place by extending boards from the centre post. A half-inch board is then bent around the outside of the studs, about 6 ft. from the top of the foundation, and tacked to them as they are put in place. Hoops are then placed at intervals around

the outside of the studs. The best material for making the hoops is half-inch green elm about three or four inches wide. It is well to have it double so that all joints are broken. The first hoop should be about 4 inches above the foundation, the second 18 inches, and gradually increasing to about three feet at the top of the silo. After the lower portion has been hooped, the upper scantling or studs may be attached, plumbed, and hooped in the same manner. A plate should be placed on the top of the studs for the base of the roof and to protect the wall from the rain.

The inner side should be lathed with half-inch green elm, about 3 inches wide preferred. The outside should be sheathed perpendicularly with 7-8 inch matched lumber, hemlock preferred.



Circular Frame Plastered Silo. This silo should be sealed on the outside with matched lumber to make it complete.

A movable staging should be built to be used for plastering the inside of the silo. There are several mixtures advocated for plastering a silo, but the most satisfactory one is one part of cement to three of common mortar. An addition of powdered asbestos will improve it materially, as it makes the plaster more adhesive and relieves any danger of it falling off. Some raise the objection that the plaster will become damp, due to the action of the acid in the silage. However, all silos of the type inspected by the writer were found to be in perfect condition after being used for three or four years. The only precaution necessary is to be careful not to puncture the wall when taking out the silage.

A roof is almost necessary on this kind of a silo; having a double wall the water has a chance to enter between the partitions when the roof is absent and cause decay. The walls will be greatly benefited by a coat of paint. It will add to the durability of the silo and to its appearance.

A continuous door is quite easily constructed in a silo of this type. Where you propose to put your door, simply lath and seal up to the edge of the studding on either side. Nail strips along the side of the studs and place two layers of boards with paper between. Make sure to break all joints. Doors may be made in sections, but they are expensive and not as satisfactory. The hoops make it unnecessary to build a ladder for getting into the silo.

ALFALFA THE GREATEST OF CROPS.

R. H. Harding, Thorndale.

There is not another variety of fodder that is being kept before the minds of farmers by the agricultural press and Farmers' Institute lecturers as is alfalfa. Yet we find that a very small proportion of farmers are growing it. Why? I don't know, unless it is that we are a slow class of people to make new ventures. But be that as it may, the area devoted to alfalfa is bound to increase. It is one of the most valuable crops that a Canadian farmer can produce.

Alfalfa will produce two or three cuttings each season and continue to do so for several years when on suitable soil, and it will leave the soil in better condition than it was before being seeded. It will at the same time supply the most nutritious fodder for all classes of live stock, especially dairy cows and sheep, that can be grown.

Alfalfa will grow upon any land that is not watersoaked within 18 or 20 inches of the surface; in other words, it will likely prove a failure on low-lying land that requires underdraining. Some tell us that alfalfa will stop up tile drains. I have had it growing to perfection over a tile drain for several years and with no apparent ill effects. We have been growing alfalfa for about 10 years. Our farm is slightly rolling and is of three different varieties of soil: black loam surface with clay sub-soil, medium clay surface with heavy clay sub-soil, and clay loam with gravel sub-soil, no gravel being within three feet of the surface. I have not as yet grown alfalfa on this latter soil, but I have a piece prepared for seeding this spring and I feel satisfied it will flourish there. Of the other two soils we have had the greatest returns on the heavier clay, especially upon a part of the field that slopes slightly to the south-east. It is not underdrained. Upon this three acres we grew about five tons per acre in 1908; somewhat less last season owing to the effect the extreme drought had on the third cutting.

The land for alfalfa requires closer attention in preparation than is necessary for any other crop for the reason that it is likely to remain untouched with the plow for several years, and if blue grass is natural in the soil, as it is in mine, it will gradually creep in and crowd the alfalfa out. Hence the necessity of cleaning it out thoroughly before seeding. Blue grass is the only enemy of alfalfa that I have to contend with; Canada thistles and all such weeds will disappear completely in alfalfa.

We seed practically all of our spring seeding to clovers, but at the same time we aim to seed about four acres to alfalfa each year. Our plan is to plow up a red clover sod as soon as possible after the clover is taken off, say about July 20th or

earlier. After plowing we disc the ground a few times, then put on the spring-toothed cultivator at least once a week, or whenever the field is dry, right up into the fall. This works all grass roots, etc., to the surface to be killed with the sun, wind and frost. It practically summer-fallows the ground as well and the spring-tooth cultivator leaves the ground ridged, so that in most cases a couple of strokes of the cultivator in the spring (one each way) is sufficient to make a nice, mellow seed bed.

I use the best seed that can be procured. I sow it at the rate of 15 lbs. an acre in front of the drill tubes. I sow it along with five pecks of barley an acre, obtaining therefrom about 30 to 40 bushels of barley an acre. We have never failed yet to secure a splendid catch of alfalfa. I have heard Institute lecturers and others advocate sowing alfalfa without a nurse crop. I place considerable value, however, upon the barley stubble, as I have found that it holds the snow longer in the spring as well as shelters the clover from the parching winds. It has been advocated to sow 20 to 25 lbs. of seed per acre. That depends largely upon the fertility of the soil and the condition of the seed bed.

I am often asked the question, is alfalfa good for pasture? My answer is that I prefer to cut and cure it for feed rather than risk having it trampled and cropped off so closely that it is liable to be killed. Alfalfa is too valuable a crop for one to take such chances.

I would urge every farmer to try some alfalfa, even though it be not more than an acre at the outset. Send to the O.A.C., Guelph, for nitro-culture and treat the seed with it. This treatment will only take a few minutes and will be of untold benefit where alfalfa or sweet clover has not already been in the soil. Full directions for using are sent with the culture and the seed can be treated with very little time or trouble. I would also urge that it be sowed in front of the drill tubes. There are several reasons for this: 1st, it is then sure to all be covered and none of it too deep; 2nd, if sown behind the drill a great deal of the seed is likely to fall into the tubes and be buried so deeply that it will never germinate; 3rd, if seed is treated with nitro-culture and sown behind the drill, the sun and wind are liable to destroy the effects of the bacteria before it is covered by the harrow.—Courtesy of *Farm and Dairy*.

WHY UNDERDRAINS ARE VALUABLE.

Prof. W. H. Day, O.A.C., Guelph.

If underdrainage will increase the crop output of land by $20 per acre, on the average, as it does according to the reports of men who have drained, it should be interesting to enquire how it does so, and to note the change in soil conditions that contribute to such an important result.

More air in Drained Soil.

In the first place drains have a loosening effect on the soil, thereby rendering it more porous and therefore capable of containing more air between the soil particles. Not only so, but the air is able to pass in and out of the soil more freely because of the larger pores, and in this way the soil air is purified and the roots have a healthy atmosphere in which to live. It should be

borne in mind that pure air is just as essential to normal root development as to satisfactory growth of animals. This being the case the supplying of abundance of fresh air as a result of drainage is an important improvement in soil conditions.

More Water in Drained Soil.

But there is another important result of the increased porosity that drainage gives; a drained soil, when ready to work, has more water in it for the crops than an undrained soil when it is ready to work. Strange as this may at first appear, it seems quite natural on second thought, for there's more room for water, more pore space in the drained soil. By actual test of a sample of loam brought in from the field, and one part packed like undrained soil, and the other left loose and porous like drained soil, I have found the latter, after being saturated and allowed to drain to retain 28 per cent. more water than the former after being treated in the same manner. We must conclude that between drained and undrained land the difference in water-retaining power is somewhat similar. Applying this percentage to a soil drained three feet deep, we find that when fit to work it actually has about three inches more of rain in it than similar soil, but undrained, has when it is ready to work, and three inches is about as much rain as we get in a whole month anywhere in Ontario.

Drained Soil and Capillarity.

Now the upper lairs of the soil, where the roots feed, are not capable of storing enough water for the crops, even when aided by the summer rains. But deeper down in the soil, three, four, five and six feet, there are larger quantities of water, which travel slowly upward and gradually reach the roots. Water travels upward through the soil as tea will travel upward through a lump of sugar, or water through a sponge. This movement of liquids upward or sideways through porous bodies is known as capillary action or capillarity. Liquids move downward by the same process, as well as by the more rapid action of gravity. And when a soil has been saturated and all the water that will has drained away, it is this same power of capillarity that holds a large amount still in the soil. Capillarity is not a new idea. From childhood we have seen coal-oil lamps with the oil travelling up the porous wick by capillarity to supply the flame at the top. The same thing takes place in the soil. As the dry weather advances and the roots use up all the available water in their vicinity and call for more, as the flame calls for oil, capillarity steps in and by slow degrees raises a continual supply from the moister soil below as the wick raises the oil, and so the plants thrive on into the drought. By and by the water supply lessens, and the plants begin to wilt and turn pale, just as a lamp flame grows dim when the supply of oil is checked. Now, drained soil has greater capillary power than the same soil undrained, because it is more porous; and, consequently, it continues to bring up water from below and keeps the large plants fresh and green long after the undrained has failed to supply enough for its small ones. The reader will readily recall that in the dry weather of August the driest parts of his farm are those that in the springtime were the wettest, and, further, that the crops on these portions are the first to suffer from drought, results easily explained when he knows that these soils contain really less water when fit to till, that they bring up less by capillarity, and that they lose more by run-off, and also more by evaporation, as we shall see later.

More Root Space.

But there is another reason why capillary action is slower in undrained soils: Roots strike much deeper in drained than in undrained soil. The deep rooted pines grow on high, well-drained land, the shallow rooted ones on flat, wet-bottomed land. In undrained land the roots of any crop stay near the surface, and thus when the dry weather comes capillarity has much further to bring the water to the roots than in the drained land; and the farther capillarity has to act the less water it will deliver to the plant, just as a man pumps less water from a deep well than from a shallow one.

Warmer in Spring.

Moreover, in the springtime a drained soil is warmer than an undrained, by from 5 to 12 degrees. Two causes unite to keep undrained soil cold. First, water is the hardest known substance to heat, and since for three or four weeks the undrained soil contains more water than the drained, it will naturally heat more slowly. Secondly, evaporation is a strong cooling agency. It takes about 5.9 times as much heat to evaporate water as to heat it from freezing to boiling; and all that portion of the sun's heat used in evaporation is not available for heating the soil. Now evaporation falls off much earlier on the drained land and hence the undrained remains cool much the longer.

Seeds Germinate Better.

The first, and one of the important results of this difference in temperature, is that seeds germinate better in the drained land. Every kind of seed has a temperature at which it germinates better than any other. At too low temperatures many of the seeds will not germinate and those that do grow very slowly. Drainage overcomes this slow, incomplete germination.

Bacteria Thrive Better.

From the higher temperature, coupled with the presence of more fresh air, the drained soil is superior in another way. Soil is alive with bacteria. These little organisms are to the plant what the cook is to the family—they prepare the food, make it edible to the plant, so to speak. By their agency manure and clay and sand, which the plant cannot use as such, are changed into salts, which dissolve in water, and with it pass into the roots to sustain the plants.

These bacteria need fresh air as much as plants or animals do. In the drained land there is plenty of it. Moreover, a congenial temperature is needful as much to them as to man, and this, too, they find in the drained soil. Here, then, they thrive and flourish, combining the elements of the air with those of the soil, and give to the plant abundance of food made to its very liking. In the undrained soil, however, the scant supply of air becomes impure, and this, with the cold, renders most of them so inactive that but little food is prepared: and one of the varieties is so constituted that when air is scarce it lives on the food already fitted for the plant. From which it follows readily that the amount of plant food available in drained land far exceeds that in the undrained. And the more extensive root systems in the former enable the plants to make full use of this advantage.

Easier to Work.

The greater porosity and looseness of the drained soil, coupled with its superiority in other physical properties, prevents it from baking as hard as the

undrained, and consequently it is in better "condition" than the undrained and hence easier to work.

Thus we see that in every essential property the drained soil is superior, and hence it is not surprising that it gives the better financial returns.—Courtesy of *Canadian Farm.*

KEEP AFTER THE WEEDS.

A. E. Slater, B.S.A., O.A.C., Guelph.

With the germination and growth of the seed, weeds also appear, and with them the farmer's problem, the old fight—how to eradicate or get rid of the weeds. How small and beneath our notice they seem at first, when we notice one or two amongst the crops. But like all evils, if not checked at once, they spread and multiply until at last the farmer sees his profits decreasing, and the cost of producing his crops increasing. Then and only then, many farmers realize that the weed problem is a matter of emphatic concern.

Moreover, the spread of noxious weeds is increasing. In spite of excellent literature on the subject, one of the best books obtainable being "Farm Weeds," published by the Dominion Department of Agriculture, and the numerous bulletins of the Ontario Agricultural College and other institutions, yet the agricultural industry of the country is sorely menaced by the spread of noxious weeds. Never can farmers overcome this evil, until first of all they realize its significance, and secondly obtain the knowledge necessary to equip them for the fight.

Why Do Weeds Spread?

What are the reasons for this spread of weeds? First of all, carelessness when they first appear, in allowing them to obtain a foothold, then ignorance of their habits and manners of growth, thus making extermination difficult when the field has once become over-run. Third, the sowing of impure seed, particularly of clover and grass seeds, and the importation of many of our worst weed seeds, in the screenings from the elevators. Also failure to keep fences and roadsides free from weeds —a simple matter.

Losses Due to Weeds.

In what special ways do weeds injure the growth of crops? Firstly, they take up the plant food in large quantities, but more important than this, they absorb tremendous quantities of soil moisture, leaving the soil much drier than it otherwise would be. Then, too, by their more vigorous growth and hardier life they go ahead from the first, and more or less choke out the young crop. Who has not seen pastures in which the clover has, to a large extent, given way to coarser grasses and weeds? Then, too, they are an expense. Frequently a good rotation and a paying crop has to be dropped for a year or two to rid a particular field of some noxious weed. Cost of harvesting is increased, and last, but not least, they are an eyesore, a blot on what otherwise is frequently a well-managed and well-kept farm. Let us rather increase our pleasures in life by beautifying flowers and trees and wage eternal war on every weed.

How to Tell Weeds.

In order to fight them more readily farmers must know them, their names and their habits of growth. To make this an easier matter we can place all weeds into three great classes. These we call:

1. Annuals—or weeds which grow and produce seeds in one year and die in the same year.

2. Biennials—Weeds which live for two years.

3. Perennials—Weeds which live for many years.

Amongst annuals may be named wild mustard, wild oats, wild buckwheat, purslane, ragweed and some others. Amongst biennials we have blue weed and burdock as the more common. Amongst perennials we have most of our noxious weeds and the hardest ones to eradicate, such as perennial sow thistle, Canada thistle, oxeye daisy, bindweed, dandelion, couch grass. These lists are not, of course, complete but they will suffice to make farmers acquainted with some of the commoner varieties.

How to Kill the Weeds.

First of all get the weed placed in the right class—one of the three mentioned. If you cannot name it or place it, or if it is new to your locality, send the weed to the "Botanical Department," O.A.C., or take it to one of the agricultural representatives if you have one in your district, or send it to the Central Experimental Farm or to any of the branch farms or agricultural departments in the various Provinces. Now, that we have our weed placed, how are we to get rid of it? That depends entirely on which class it belongs to. If an annual, or one-year plant, any method that will cause it to grow quickly and then be destroyed while still young and before it can produce more seed, must in time succeed. If it be a two-year plant or biennial, spudding is practised—that is, cutting off the plant below the crown of the root before it flowers.

Perennials are far more difficult to destroy, because of their continuing to live year after year. Most weeds belonging to this class have roots which are called "running root stalks," which are sometimes of very considerable length and spread over a great surface. If these roots are broken into separate pieces, as is often done by plowing and harrowing, each piece will usually produce a new plant, and thus we have a hundred in the place of one, instead of lessening the number. Nevertheless, we can eradicate even the worst of these weeds. Very thorough treatment is needed though, and frequently the rotation has to be changed. Plowing and constant cultivation, thus exposing the roots to the sun, is often effective. The purpose is to prevent the plant from producing seeds and to keep its leaves cut off, as this weakens the plant to a great extent. Usually let them develop their flower stems and then plow down. This will weaken them, and a few more cultivations will usually settle them, and the winter will help to do the rest. In persistent cases a systematic short rotation, with regular seeding down to grass or clover, cleans the land. Mr. J. H. Grisdale, of the Central Experimental Farm, Ottawa, recommends the following rotation for the East: "To destroy weeds, probably the best rotation possible is one of three years' duration, including clover and mixed hay, followed by corn or roots, the land shallow-plowed in fall and sown to grain the next spring, with ten pounds of red clover seed and twelve pounds of timothy per acre." The great importance of a hoed crop, such as corn or roots, is, of course, as a cleanser of the land and destroyer of weeds. The importance of grass and clover is to choke out many perennial weeds.

Ontario's Worst Weeds.

Some of the most noxious weeds to be found in Ontario will now be mentioned, together with such means as have been found suited to their eradication.

Most farmers will agree, I think, that the perennial sow thistle heads the list. In its first year it often passes unnoticed, but may be recognized by its rosette of leaves lying close to the ground. In its second year the bright orange flowers are conspicuous all over the affected field. It may be known also by its running root stalks. Crop rotation, the growing of buckwheat or rape and frequent cultivation or summer fallowing are very effective methods of eradication. Smothering is sometimes useful, a crop like rape or buckwheat being used to choke it out.

Ox-eye Daisy. Conspicuous by its large, white flowers. It is usually troublesome in pastures, and plowing down of the sod, followed by a hoed crop, will usually eradicate it.

Bladder Campion. Flowers white and borne in drooping clusters. This weed is spreading in the country and is frequently found in clover seed.

Eradication. It is a deep-rooted perennial and can only be got rid of by deep plowing after harvest, after which continue with shallow cultivation. Next spring continue with deep cultivation and then put in a hoed crop and keep it clean.

Wild Mustard. Most of us know this little pest with its fairly large, bright yellow flowers, appearing amongst the grain and making it appear like a sea of blazing gold. Don't confuse it with worm-seed mustard, which has a *small* yellow flower.

Eradication. If there are only a few, hand pulling will serve to get rid of them. The great remedy where mustard is abundant is spraying the entire field, grain, crop, weeds and all, with bluestone (copper sulphate), using about two pounds of bluestone in one hundred gallons of water. This kills out the mustard plants in a few hours, but does not injure the crop at all, but must be sprayed on when the mustard is young and tender, just before it commences to flower. This method has been used largely in Ontario and has proved a success.

Devil's Paint Brush. This may be a new weed to some, but it, too, is spreading in Ontario, particularly in meadows and pastures. It can be told by its bright orange-red flowers and tall stem, bare of leaves, the latter being near the ground.

Eradication. As it does not root deeply, frequent cultivation will kill it out. Meadows and pastures should be plowed up, and a short rotation used, with hoed crops introduced.

Let all our farmers then learn to know the commoner weeds and weed seeds. Keep a sharp lookout for new weeds in your localities. Sow only pure, clean seed, marked and guaranteed, especially clovers and grass seeds. Remember that every weed can be eradicatd, and must yield to man's efforts. Keep fence corners and roadsides free from weeds and give your neighbor a chance to farm cleanly. —Courtesy of *Canadian Farm.*

THE SEED CONTROL ACT AND ITS APPLICATION.

T. G. Raynor, B.S.A., Ottawa.

Its Origin. For several years the farmers of Ontario have realized that weeds of various kinds were increasing on their farms despite the best methods of cultivation. About 1902 the Seed Branch, which was just organized as the Seed Division, in charge of the present Seed Commissioner, Mr. G. H. Clark, under the direction

of Dr. Robertson, undertook to examine the seeds which were offered in the trade to see to what extent they were polluted with weed seeds. The results were alarming in the extreme, as many samples of seed contained several thousand weed seeds per pound, more or less harmful. As an outcome of these investigations the Seed Control Act became law on September 1st, 1905, which has as its chief object the curtailment of the spread of noxious weed life by limiting the number considered as noxious which might be sold in seed offered as No. 1, and in what was allowed to be sold for seeding purposes. This law was during its passage strenuously opposed by the seed merchants generally and not a few of the seed dealers who were influenced by the representations of the seed houses from whom they were buying seeds. However, with a strong sentiment on the part of the farmers behind it, it became law with a number of modifications as compared with its first draft.

After an experience of nearly five years in its application, nearly every seed merchant and almost every dealer are favorable to it, and are making an honest effort to live up to its provisions. The change has come about by a better understanding of the law and its intent. In enforcing the law it has been the policy of the Seed Branch, which is charged with its enforcement, to explain, and in every way furnish free of charge information about the seed the various firms were handling and the kind and quality the farmers were growing and buying.

This co-operation on the part of seed merchant, seed dealer and grower to produce and handle only seeds of known quality has made the Act quite popular and it is now sworn by instead of sworn at.

A Misapprehension.

For some time, and the allegation dies hard, the merchant and dealer said they were unfairly discriminated against, in that farmers were allowed to sell low-grade small seeds to one another regardless of the law. This position was disclaimed by the Seed Branch, and a few test cases were made, showing that it was just as unlawful for a farmer to sell low-grade, impure seed for seeding purposes as for the seed merchant or dealer.

Some Things the Law Requires.

Through the provisions of Sec. VI. there are fifteen noxious weed seeds mentioned, and if more than five of them are found in one ounce of red clover, or more than one in a pound of any of the cereals, such as wheat, oats and barley, etc., then it is necessary that such seed, if held for seeding purposes, be labelled, giving the purchaser the information that such weed seeds are in it. Through adding a certain amendment to the Act this spring, any seeds, garden and vegetable included, which fall below two-thirds the percentage for their proper germination, must be labelled, stating how much will grow; for example, corn should germinate 95 per cent. If the corn falls below 63 per cent. germination, then it should be labelled in future.

The law at present only defines what wheat No. 1, red clover, timothy, alsike and alfalfa should be. It should not contain more than five noxious weed seeds per ounce for all but alsike, where 10 per ounce is allowed; only 1 per cent. of any kind of weed seeds is allowed and 90 per cent. should grow. In the proposed amendments it is expected that two and three grades will be defined.

The limit of the number of noxious weed seeds allowed to be sold in the small seeds is 5 per 1,000, or ½ per cent., which is rather more than should be allowed.

So far it may be said that the law has had good results along the line of the objects its promoters had in view.

THE PRODUCTION OF IMPROVED SEED GRAIN.

I. F. Metcalfe, B.S.A., Collingwood.

For many long centuries man has been engaged in the improvement of our cereal grains. At the start these grains were simply small seeds, which were, however, sufficient for the plants' purposes, viz., reproduction. Man has made these seeds larger—possessing more food value—and at the same time more productive, so that to-day if we were to see the wild progenitors of our cereal crops we would find it hard to credit the improvement which has been made.

Experimental Plots at Collingwood, where grains and vegetables are tested for the benefit of the farmers in Simcoe County.

A great deal of the improvement that has been made so far has been accomplished by selecting the largest and plumpest grains. That is what is being done to-day by means of the fanning mill, and is the line that is likely to be most largely followed, because of its convenience and the good results that are being obtained from it.

There is another and a very important factor that is being neglected by the fanning mill method, and that is the factor of yield. Because a grain is large, plump and heavy we have no indication that it is productive—in fact the condition may very easily be the reverse, since if a plant has a small number of heads and only a few seeds to the head, it has an excellent opportunity to make good seeds of them. Thus we may be selecting as well as we can with the fanning mill, and at the same time be steadily reducing the yields of our crops.

It does very little good to criticize a method without being able to provide a remedy, and the method in use by the Canadian Seed Growers' Association comes nearest to remedying, in a practical way, of any method that I know of. This consists essentially in having a small plot of clean ground set apart for seed production. The idea is that this grain shall be allowed to become well-

matured, since grain which is cut a trifle on the green side—as most of our grain is cut—is not well enough matured to make the best seed grain. At maturity the farmer goes through this seed plot and selects the best heads from the best plants in the plot; and there is no place like the field for this selection, since a person has a good chance to balance up the good and the bad points of the various plants there. It may be argued that this will take a considerable amount of time, but that is not a fact. If the farmer will take a bushel basket and fasten it by means of a strap or rope put over his shoulders, he can walk fairly rapidly through his field and pick the desirable heads with both hands, so that it need not take long to fill the basket. A little practice will enable him to do this work fairly accurately and, at the same time, quite rapidly.

In advocating this method of selecting, I am not advocating that the fanning mill selection should be done away with, but that both of these methods should be used. After the selection of the heads has been made it will be necessary to increase this seed for a couple of years to get enough seed for a man's whole farm and some for sale. In this work of reproduction it will be necessary to rely on the fanning mill for selection purposes.

Does it pay to go to all this trouble? Yes, I believe it will pay better than almost any other work that is done on the farm. In order to see just what benefit would be derived I sent last spring to Mr. Newman, the Secretary of the Association at Ottawa, for some samples of their selected varieties. He sent Red Fife Spring Wheat, No. 21 Barley, and Banner Oats, and these were sown on the Experimental Grounds here under exactly similar conditions to the plots containing those varieties in the variety tests. The plots containing the selected varieties are far ahead of the regular varieties in every case, and particularly in the case of the Red Fife Spring Wheat, where the selected variety will probably have double the yield of the regular variety.

If we can just get the average farmer of the country to see the advantage that is being obtained by this method of selection, we will soon make a wonderful change in the crops of the country. In the past a great deal of attention has been paid to getting the best varieties, and this, I grant you, is very important. However, it is much more important that a proper selection should be made within the varieties themselves. When this is well looked after we will not have nearly so much difficulty as we have to-day in having so many varieties which are apparently identical.

CONSERVATION OF SOIL MOISTURE.

W. C. Good, B.A., Brantford.

I suppose a better title for this article would be "Control of Soil Moisture"; but as the farmer's main problem is the retention in the soil of sufficient moisture to supply the needs of his crops, I shall deal mainly with this aspect of the subject.

It is true that one of the greatest needs which exists in our agriculture is the removal of *surplus* water, because no crops can grow where the soil continues saturated with water; and to effect this removal underdraining is the only satisfactory method. Underdraining will, on the average, pay for itself in two or three years on all land which needs draining, and our farmers cannot find a better investment for their savings than in this special work. But the question of drainage is a big one in itself and I must not dilate upon it at present.

In considering the "Conservation of Soil Moisture," it is well to begin with a consideration of the requirements of our crops. It has been estimated that from three hundred to five hundred tons of water are used for the production of one ton of dry matter; that a crop of thirty bushels of wheat per acre requires nine inches of rain; and that a crop of three tons of clover hay per acre requires thirteen inches of rain. These typical facts show us what tremendous quantities of water are used by growing crops, and we must remember that if the crops cannot get the water they will not grow; in fact, their yield is largely dependent upon the amount of water available during the growing season. We must remember also that the quantity of rain which usually falls during the growing season is much less than would satisfy the demands of our crops, and that, therefore, it behooves the careful farmer to husband all the water that remains in his soil from the winter's snow and early spring rains, and also all the water that falls during the summer. How can this be done? In order to answer this question we must first understand clearly the way in which water is retained by soils and the way in which it is removed from them.

If I plunge a stone into a pail of water and remove it I have noticed that a thin film of water remains sticking to the stone. If, instead of the stone, I take a handful of gravel and treat it similarly I notice the same thing happens; each small stone remains covered by a film of water, all the surplus water draining away. Now any soil is composed mainly of a number of small particles of rock, and the moisture held by it is held in the form of these films surrounding, or "wetting," the separate particles. Of course, one may have a soil temporarily saturated with water, *i.e.,* with all the interstices between the particles filled with this water. But this water-logged soil will grow nothing and as it is a condition destructive to vegetation, we need not further consider it at this present time. The water, then, which is held or retained by soil is held in the form of thin films surrounding the soil particles, and a moment's thought will show you that the amount of water which a soil can thus retain is proportioned to the total surface of the particles. If the particles are few and large, as in a coarse gravel, the amount of moisture retained will be relatively small, whereas if the particles are small and numerous, as in a clay, the amount of water held will be relatively large. Actual measurements abundantly confirm these statements, showing a water content of, say, 50 per cent. in a well-drained clay soil, whereas in the gravel the water content will be, say, only 5 per cent. There are, then, wide differences in the natural capacities of soils to hold moisture, and, when one is choosing a soil for any particular purpose, it is all important to take this matter into consideration. Everyone has seen crops of clover or grass "burnt up" on light sandy or gravelly soil by two or three weeks of hot, dry weather, when, on land inclined to clay, the same crops would be unaffected by the drought. The difference is the difference in the natural water-holding capacity of the two soils. However, when I thus compare the clay with the sand in favor of the former, I disregard a number of other considerations which must be weighed in practice, such as ease and rapidity of drainage, etc. For instance, the demands of a cherry orchard are exceedingly different from those of an oat crop, and in the choice of soils these things must be considered.

But for most of us there is no choice of soils; we find ourselves with a certain piece of land at our disposal, and we must make the most of the opportunity. We can choose what plants to grow, and in this choice is one great key to success. But we cannot change the whole texture of the soil, and must make the best use of that which nature has given us.

With so much said as to how soils hold water, let us see how they lose it. Soils lose water by sub-surface drainage, but this is in every way desirable, as it only removes the surplus water which would interfere with plant growth. Soils also lose water by evaporation into the air. When this takes place through the leaves of plants whose growth is to be fostered it is also desirable, but when it takes place from the surface of the soil or through the leaves of weeds it is a total loss, and means should be taken to avoid such losses as completely as possible. Now when water evaporates from the surface of soil the upward flow is carried on by capillary action, just as the oil is sucked up in the wick of a lamp, and in this way immense quantities of water are lost to the soil.

Now to return to our previous question: How can the farmer conserve the soil moisture?

To a limited extent he can improve the water-holding capacity of his soil. So far as light sandy land is concerned the admixture of a considerable percentage of humus is of advantage, so that by plowing under green crops or manure such land is not only made more fertile, but is also enabled to retain more moisture. Heavy land is benefited by deep plowing or sub-soiling in the fall. Experiment shows that soil thus treated retains more moisture than unstirred soil, and the only explanation I can give can be understood by describing an easy experiment. Take a lump of clay soil and immerse it in water until it is saturated. Then remove it, and one notices that the film surrounding the whole lump holds in the water and drainage is thereby impeded. But if this lump be set down on some moist cotton drainage will at once set in and remove the surplus water. Now a heavy soil that has been stirred deeply is composed of more or less isolated lumps, each of which is enabled to hold a little more water by reason of its relative isolation than it could when in the closest contact with other portions of soil. In practice I always plow heavy soil deeply in the fall, and have had splendid results in the succeeding year's crop of oats. I have never tried sub-soiling, but would like to make the experiment some time. Another method of increasing the water-holding capacity of low soils inclined to be heavy is to underdrain. This makes the soil more porous and, by removing surplus water, actually increases the capacity of the soil to retain moisture in times of drought.

But the main effort of the farmer must be to prevent useless evaporation from the surface. This can be done in a variety of ways which I shall briefly enumerate:

1. By surface cultivation. Whenever possible the frequent stirring of the soil maintains a dust mulch that acts as an effective blanket and protects the soil underneath from evaporation. The theory of this is that the capillarity of the soil is broken and the sub-surface moisture prevented from rising. The loose soil on top dries out, but the soil beneath is protected. Every farmer knows how moist and mellow a cultivated field remains while a piece of land alongside, left hard on top, loses practically all its water during a prolonged dry spell. Surface cultivation also renders the soil porous, and heavy rains coming during the summer soak in instead of running off. This is especially true of hilly clay land. It is particularly advantageous to cultivate after a good rain, just as soon as the land is fit to stir. By thus doing the dust mulch destroyed by the rain is restored, and the water conserved for the use of the plants.

The effectiveness of soil mulches depends upon a number of factors, such as the nature of the soil, the thickness and coarseness of the crumb structure, the frequency of stirring, etc. A mulch in heavy land is more effective than one in

light land, especially if the little lumps of soil are not too large, say from the size of a pea to that of a walnut. In practice a two-inch mulch is a good one, and stirring once a week is often enough.

2. By the use of straw or vegetable mulches. This is rarely capable of extensive application, but is useful in connection with the top dressing of a bare sod with manure. It is a good method, too, in the protection of young trees, shrubs, etc., against drying out. Many young trees that are annually lost could be saved if they were mulched with plenty of strawy manure.

3. By keeping down weeds. Every bit of moisture used by weeds is lost to the cultivated plants. Surface tillage, hence, usually accomplishes two purposes: it destroys weeds and maintains an earth mulch.

4. By planting windbreaks. A dry, hot wind which sweeps over the surface of the soil with great velocity has enormous drying power; and windbreaks, by moderating the force of the wind, are of considerable value as conservers of soil moisture.

The wise agriculturist will try to understand how soils hold or lose moisture, and when he understands this he will be able to adapt his methods to the requirements of his crops and to climatic conditions. A knowledge of general principles is of highest importance, and I shall be well satisfied if I have given you any clear idea of the general principles underlying the practice of conserving soil moisture.

CULTIVATION AND ROTATION OF CROPS.

R. M. Young, Carlow.

In order to have good crops it is necessary to have the soil in good condition. In the spring some farmers think it a waste of time to wait until the land is dry enough to work. The farmer who begins work before the land is just right would be better in his bed than working on the land. Therefore, do not begin by spring ploughing if it has been ploughed in the fall. If you plough it again in the spring you are destroying, to a large extent, what the frost did for you in winter by way of pulverizing the soil. Use the cultivator and disc instead of the plough. This method is superior, as the ground does not dry out so much. I do not cultivate more than two and a half or three inches deep in spring, as this amount of soil, worked as it should be to a fine tilth, acts as a mulch and retains the moisture for the seed, which should only be sown from one and a half to two inches deep. I believe this about right, as germination is likely to start more evenly than if it were deeper.

The sources of plant food are twofold—the atmosphere and the soil. No plant, however, can live entirely upon either air or soil; it must draw something from each source in order to ensure perfect growth. The elements which constitute the air remain practically the same; with the soil it is otherwise. The available supply of plant food which the soil contains depends, first, upon its original composition, and, second, upon the treatment to which it is subjected. It is quite possible to work land, even a fertile soil, in such a way, and subject it to such a system of rotation that in a short time it will cease to produce satisfactory returns. The composition of the great bulk of our soil is such that with proper treatment there is little danger of impoverishing it. Therefore, to farm land in order to obtain the largest yield from year to year is a question of vital importance to all farmers.

Do all ploughing in the fall, and, if possible, plough twice. As soon as possible after harvest, plough lightly with twin plough, or even stir surface with a disc harrow, as this causes a great number of weed seeds to germinate, as well as destroys weeds that have not matured. It also tends to stop evaporation.

It is a matter of common observation that seed sown on clay land that has been ploughed in the spring will take a longer time to germinate. This is true in all cases, except where a shower falls shortly after the seed has been sown. This fact is explained only in the following manner: When a clay soil is ploughed in spring, clods form, which prevent the rapid development of the root system; thus much of the food stored up within the seed is used up before the plant can obtain any nutriment from the soil. Besides there is a deficiency of moisture within reach of the roots which will tend to retard the growth of the crop, and if a dry season should follow, the crop will suffer severely from drought. If, however, a clay soil is ploughed in the fall, the action of the frost on the water within the soil will force the particles apart, and thus the soil is left in the best possible condition to produce rapid germination of the seed. As the roots of the plant are its feeders, and all water ordinarily used by it passes through these channels, we can see at once the importance of having the soil in such a state of division that the roots may readily make their way down through it. The root and rootlets of the plant in burrowing through the soil come into intimate relation with the soil particles which hold a film of water in firm contact. The roots are thus surrounded by the soil water, a portion of which they are able to absorb. The water passes through the plant carrying with it soluble plant food, which is conveyed to the different parts of the plant.

Apply your manure in the winter, but do not plough it under in the spring. Keep it near the surface so that the grain will get the benefit. As has been stated, the plant roots can absorb food only in the soluble form, and a large supply of the mineral element is required for growth of plant. Therefore, not only is a large quantity of moisture demanded for the direct use of the plant, but also its presence in the soil is necessary in order that the plant food may be rendered soluble. The finer the soil is made the more plant food there is available, and the more moisture there is retained.

The particular rotation to be followed must be determined by local conditions, soil and markets. In growing the various crops, each farmer should have in his mind some definite system of rotation which he seeks to follow, in order, first, to keep the land clean of noxious weeds and, second, to economize the elements of plant food which are being constantly manufactured in the soil and applied in manure; and thus fit the soil for producing from year to year the largest possible yield.

Taking sod for the foundation, a good rotation to follow is peas, wheat, hoe crop, mixed grain, clover, pasture one year. Keep corn and roots well cultivated. After corn is harvested, cultivate the land with a two-horse scuffler as was done during growing period, and leave in this condition until spring, when a seed bed for the grain and clover seed is made with disc and iron harrows. The grain is sown with seed drill and clover seed dropped in front of hoes.

The clover plant has the ability to gather the free nitrogen from the atmosphere, and the phosphoric acid and the potash from the sub-soil, and store these elements up in its roots for the benefit of future crops. It is said that an acre of good clover stubble ploughed under is equal to eight tons of stable manure applied. Thus you will see that clover has the power to restore to the land the three

elements of which our soils are in any danger of becoming impoverished. It becomes evident that clover is such an all-important crop in our system of farm operations that it may well be called "the mortgage lifter."

COMMON SENSE IN THE COW STABLE.

Prof. G. E. Day, Guelph.

During recent years more interest than ever before has been taken in the problem of reducing cost of producing farm products. Especially is this true of dairy products, and dairy farmers are taking hold of the question in a manner which does them credit. The systematic keeping of records of performance of dairy herds is working wonders in many districts, and there seems little doubt that the practice will spread as time goes on, and that the average production of the dairy cow in Ontario will show marked improvement in the near future.

All this is as it should be, and no right-thinking person would try to discourage the efforts of the farmer to improve his dairy herd, but there is a danger that one feature of improvement may be overlooked in efforts to produce large records. No man who is handling dairy cattle can have it too firmly impressed upon his mind that a healthy cow which will produce 7,000 to 8,000 pounds of milk in a year is a more valuable asset than a diseased cow which will produce 15,000 pounds in a year; or, in other words, large records are very desirable if they do not cost too much, but if they are obtained at the expense of health and constitutional vigor they are not worth the price. The man who is truly improving his dairy herd does not lose sight of those things which make for health and constitutional vigor. In this paper only one phase of the question will receive attention, because it is the one most commonly overlooked.

Everyone knows that animals can live a considerable time without either food or water, but they can live only a few seconds without air. This fact should be sufficient to convince any person of the importance of looking after the air supply as well as the food supply. An insufficient supply of food causes emaciation, and the effect is readily noticed. When the food supply is increased the animal usually returns to its normal condition quite readily. On the other hand, the effect of a deficient supply of air does not manifest itself readily. The animal may appear to be in perfect condition, while all the time a force is at work gradually undermining its health and vigor. Finally, when the animal has been so debilitated that disease gains a foothold, we see the effect, but not, as a rule, until the disease has made such headway that it is impossible to restore the animal to health. Further, we are liable to attribute the disease to almost any cause but the true one. Air starvation, therefore, is more to be feared than food starvation, because its effects are obscure, and when they become noticeable it is too late to remedy the evil.

Dairy cattle are especially liable to injury through air starvation, from the fact that a dairy cow will usually produce more milk in a warm stable than in a cold one, and in his efforts to maintain a warm stable the farmer is apt to restrict the supply of air entering the stable during the cold weather. If the building were heated by artificial means it would be possible to keep the air pure and maintain a high temperature, but in practically all stables the heat comes from the animals, and to have pure air and a high temperature during cold weather under these conditions is something which has not yet been shown possible. It becomes important,

therefore, to stop and consider whether, after all, it is necessary to have a dairy stable so warm as most people suppose. The writer's experience is that cows appear to suffer no inconvenience from a temperature ranging between 30 and 40 degrees, provided the air is dry and the cows are liberally fed. If, however, the air is damp, such a low temperature would be decidedly injurious. Where the temperature is maintained between 50 and 60 degrees during cold weather the air cannot be pure and dry, and the effect is debilitating in the extreme. A few more pounds of milk may be obtained, but they are obtained at too high a cost. Less feed may be required, but saving feed at the expense of health is poor economy.

When the air of the stable is kept pure and dry by the admission of plenty of pure air, it is absolutely necessary to so arrange the fresh air inlets that draughts are impossible. Failure to observe this point has led many people to think that a cool stable is injurious, and the inlets are promptly closed. Thus we find many a herd abundantly supplied with expensive food, while the cheapest thing in nature, and the most necessary for maintaining health, is grudgingly supplied. Let us remember that good health and a sound constitution lies at the bottom of all successful breeding operations, and that a superstructure built upon any other foundation will ultimately collapse.

CO-OPERATION IN MARKETING.

S. E. Todd, B.S.A., Petrolea.

The co-operative marketing of farm products is a subject deserving of study and encouragement from all classes of our people. To the farmer, it offers a means of vastly increasing the revenue of the farm; to the economist, it is of great interest, in that it tends to reduce the expense of operating the machinery of marketing, thus effecting a great saving of money and leaving many more people free to become actual producers, in place of being only handlers of produce. It is of interest to the consumer, because it affords a means by which honest producers can place an article of guaranteed quality upon the market in quantities sufficient to supply the demand. To the moral reformer, it offers the surest means of raising the standard of honesty amongst our rural population, in that co-operative marketing secures a discriminating market and thus greatly increases honesty in production. Lastly, it is of interest to the statesman, because it affords the best means of increasing the wealth of the nation, through the increase in agricultural wealth, thus tending to attract to the land more intelligent and better educated people.

To the person who has never studied what has been accomplished in Europe by agricultural co-operation these statements may seem extravagant, but writers of all classes in the Old Land agree that co-operation in its various forms either has become, or will become, the solution to the whole agricultural problem. There it has assumed many different forms of activity. By its means German farmers have been able to secure cheap credit with which to improve their farms, and pay for high-priced fertilizers and machinery. It has also been the means by which Denmark has gained her proud position as the leading country of the world in the production of high-class butter, bacon and eggs, and has changed that country in the course of half a century from a condition of poverty and despair to comfort and high optimism.

In Ireland its chief activities have been directed towards organizing the dairy industry, and so successful has it been that at the present time there are nearly one thousand co-operative dairies in actual operation. It is steadily gaining recognition from statesmen and economists, and is becoming the sure foundation on which Irish agriculture is advancing towards stability and prosperity. In England it is looked upon as being an essential part of the scheme of "small holdings" of land. Large farmers are also finding the co-operative methods to be the most effectual in their business. In France, Belgium, Austria and Italy co-operation in agriculture takes various forms, according to the needs of the situation, and is successful in proportion to the intelligence of the people and the commercial possibilities of the branch of agriculture to which it is applied.

Agriculture as an industry differs in certain fundamental principles from other industries, and consequently radical differences are necessary in its organization. Increase in population and means of production tend to centralize nearly all the industries of the towns—that is, it tends to place the industry under the control of a few people. In the country, on the other hand, a like condition tends to divide and subdivide the means of production, *i.e.,* the land, and to place the produce of the farm in the hands of an increasingly large number of people. This leaves the industry peculiarly liable to abuses in marketing, and requires special organization for marketing purposes.

On the other hand, agriculture resembles other industries in many of its commercial details. Quantity and economy are essentials in all commercial enterprises. For instance, no manufacturer would begin to do business unless he were assured of sufficient quantity of raw material to make economy in production possible. So, too, Danish co-operators never think of organizing a creamery unless there is sufficient quantity of milk being produced to pay expenses and leave a profit. A manufacturer under such circumstances might establish his creamery at the junction of certain transportation lines. This same principle is being applied on a large scale to co-operative creameries in France, and one creamery is manufacturing the produce of a whole township.

The present method of marketing, by which farmers sell their raw material to the manufacturer or marketman, is responsible for many of the abuses existing to-day in regard to quality and quantity of farm produce. As long as the same price is paid for good and bad butter and eggs at the country stores, their production will go on, and so long as the farmer can get as much money for a thick fat, as for a bacon hog, just so long will he produce it. The cumbersome, costly and abusive system of marketing has during the past left the farmers with such a small margin of profit that the business has, to a large extent, been relegated to the least ambitious, and has allowed production to drag so far behind demand that to-day abnormally high prices are paid by the consumer. It is evident, then, that the old system is no longer practicable.

When an individual, or a group of individuals, as a joint stock company, invest money in a manufacturing enterprise, their chief interest lies in getting dividends on the money invested. They are little interested in any previous or later stage through which the product they deal with passes. Moreover, in joint stock companies the ordinary investor has no interest whatever in the product dealt with; he cares only for dividends. Right here is where the essential difference between a joint stock company and a co-operative society occurs. The farmer is interested in the co-operative creamery, bacon factory, or fruit association, only as a means to production. His primary interests lie in securing profits on the original produce of the farm. In order to do this it is necessary that he control

the marketing of his produce, and do this in the cheapest possible manner. He must also manage so that no individual member of the manufacturing or marketing organization which is handling his product secures more than his just share of the profit on the produce. For this reason his organization must resemble ordinary commercial companies in certain details, while differing materially in other ways.

The business must be sufficiently large to make economic management possible. For instance, it is useless to organize an association for handling fruit where only a few hundred barrels are produced or can be produced. The Danes have made only one failure of late in co-operative effort, and this was in a fruit association where the quantity was not sufficiently large to make the business pay.

Methods of securing capital for co-operative enterprises differ from that of the joint stock company, because the investor in the joint stock company is interested only in dividends, which are not fixed, but made as high as possible. Because the farmer is interested chiefly in profits on the produce of his farm, money invested in a co-operative marketing association receives as low a dividend as possible, and this dividend is fixed.

In Europe two systems for securing capital exist. In Denmark, the money is borrowed in lump, and a low rate of interest is secured. In some other countries shares are issued which are bought by members of the society only. On these shares a low dividend is fixed, which is made as low as will induce people to invest. All profits above the cost of management and the dividends or interest on the capital invested is then *returned to the farmer according to the business done with the association.* This is the essential point insisted upon by all "co-operators in the Old Land." The joint stock company is not recognized as a "co-operative" society by agricultural economists in Europe.

In this country, co-operative endeavor has in the past been sadly handicapped because it has not been properly studied as a commercial enterprise, the joint stock company has been used as the means of securing capital, and profits have been divided on the basis of dividends on stock. It is time we learn from European experience. They passed through a long series of experiment. When Sir Horace Plunkett started to organize in Ireland he found that the cause of failure by his predecessors in co-operative effort had been that, whereas a man with one cow was receiving dividends on fifty shares of stock, and had fifty votes in the management, another man who had fifty cows was receiving dividends on only one share which he had invested, and had only one vote. He tried to get an even number of shares held by each member, but this was impracticable, so he fixed the dividend on the stock, and allowed members to hold as many shares as they liked, but gave each member *only one vote.* This last is also an essential principle in co-operation, and is accepted by all co-operative societies in Europe.

To sum up, then, a co-operative society should observe the following fundamental principles: (1) Each member should have one vote. (2) Capital should be secured either by borrowing money or issuing shares, which should be held only by members. Where shares are used, dividends should be fixed, and be as low as will induce people to invest. (3) All profits above cost of management, interest, or dividends, etc., should be returned to the farmers according to the business done with the society. (4) The business should be capable of being developed into one of large enough proportions to allow of economical management.

CO-OPERATIVE PIGGERIES IN HASTINGS COUNTY.

A. D. McIntosh, B.S.A., Stirling.

Of the eighty-seven cheeseries in Hastings County there are only three which are not owned by patrons. Hence it may be readily seen that co-operation has taken deep root in at least one county in Ontario.

In connection with some of these large factories there are also joint stock piggeries. One of these at Mount Zion is built on the latest approved plans and working to the great satisfaction of the people who are so fortunate as to hold stock in it. As this is probably the most up-to-date and progressive piggery of the kind in Ontario, it will not be out of place to give a few details concerning its location, size, equipment, capacity, etc.

Zion factory is situated in the 8th con. of Thurlow Township. The piggery consists of two buildings, 40′ x 80′, standing side by side, 6′ apart, on cement foundations, sloping in such a way that all the effete material can be easily cleaned out into the 6′ passage between the buildings. (See cut.) This passage has a gradual slope to one end in which is a gate leading to a gutter that is used to con-

Co-operative Piggeries, showing ventilators open at the top and ends, and the driveway at the end of the gutter, where the litter is carried away in a tank wagon.

vey the waste matter to a tank wagon that disposes of it on a nearby farm. Smaller gutters from inside the pens empty into the outside one. In each gangway between the rows of pens inside there is a long pine plank tank of considerable capacity (probably 15 bbls.) into which the fresh whey from the factory runs and from which the feeder easily dishes it up to the pigs on both sides. Over the tops of the troughs there are bins for the reception of the chop, grain or other dry food material furnished by the farmers. The roofs are self-supporting, and the ventilating system is highly efficient. The capacity of the pens is 500 hogs, and at the time of the writer's visit during the first week in July the pens were full of very promising porkers. The piggery is situated about forty rods from the cheese factory. The whey is conveyed directly from the factory through open troughs made of inch pine boards.

The man in charge is hired by the year to keep the pens in tidy condition and to feed the pigs, both of which operations are certainly being well performed. The general appearance of the hogs and pens is such as deserves high commendation. One seldom meets with such little foul odor around even much smaller hog-pens than is noticeable at the Zion piggery in the warm days of July.

A very profitable turnout of hogs in 1909 is being followed up this year with a marked increase.

Two other large modern piggeries have been built recently in Hastings County, one at Moira in Huntington Township, the other at Plainfield in Thurlow Township. The former consists of one building 240 feet by 36 feet, with a long gangway from end to end in which is a long cement tank for receiving the whey from the factory, about 100 rods away. It is doubtful if the cement tank will last long.

Two 4-foot passages about 40 feet from each end receive the effete material from the narrow gutter behind the pens. These passages are so arranged as to permit of being cleaned out into a large tank waggon which conveys the manure to the neighboring farm. The feed bins are immediately over the troughs and are replenished by the owners of the hogs with such food as is most suitable for their pigs according to their stage of maturity. A regular man is employed to feed both the grain and whey and to keep the pens clean. On the 27th of July, 1910, this piggery was filled to its capacity with very promising looking young pigs. The ventilation system is not quite so satisfactory in the writer's opinion as that of the Zion factory. In a number of the pens, however, there are raised platforms for sleeping accommodation. This piggery cost $3,000 and is a source of pride and profit to the fifty-four farmers who own it and who have owned the cheese factory for over 40 years.

The piggery in connection with Plainfield factory is modelled after that of Mount Zion, although not nearly so large. Its main features are much the same as those of the one at Zion except that the manure is being partly wasted and the ventilation and lighting systems are not so satisfactory, nor are the pens quite so tidy. It is the intention, however, to have all these matters speedily rectified as the owners are quite aware of the attention being paid to these three co-operative piggeries by the patrons of other factories.

A further step along the lines of co-operation is being contemplated, viz., that of selling in car-lots direct to the packing houses. The matter is being discussed and it is believed that a long step forward will be taken next year in this direction. The optimistic mood of the owners of these piggeries indicates a progressive spirit in these farming communities. The work of Farmers' Institutes and Farmers' Clubs in these sections along with that of Eastern Ontario Dairymen's Associations seems to be bearing excellent fruits in the form of up-to-date methods and modern improvements. The writer takes pleasure in publishing the fact that some of the finest barns he has ever seen are being erected in the district just spoken of. Large fields of alfalfa are being started and the increased corn crops are being supplemented with new modern silos for their proper storage. More attention is also being given to the proper care and handling of milk and the cool-curing of cheese.

The writer has not had sufficient opportunity to visit other townships of this large county, but hopes to be able to make as favorable reports of them at some future date.

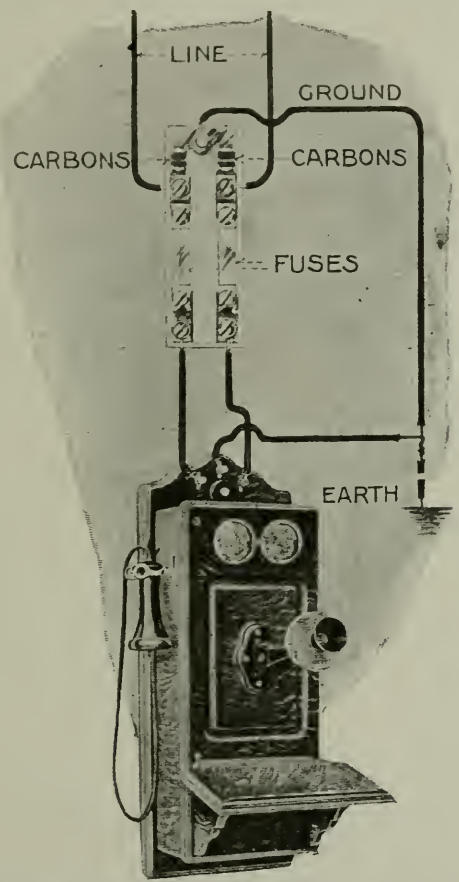
TELEPHONES FOR THE FARMER.

FRANCIS DAGGER, TORONTO.

The power of being able to converse with our fellow-men is one without which life would be barely worth the living. The use of this power is, however, restricted to the number of persons whom our voice can reach, and who can participate in our conversation. A person on an uninhabited island or alone in a prairie shack

finds in such an environment that the sense of speech contributes little or nothing to the joy of living, but on the contrary only tends to remind him of his utter loneliness; so much so, that the prolonged endurance of such a condition would deprive him of his reason.

To carry this thought a little further may we not ask if it is possible for a family or small community to experience in a limited degree this sense of loneliness due to the restriction which their environment places upon the opportunity to exchange conversation with their fellow beings? I think it will be conceded that a community or family whose most expeditious means of communicating with



Subscribers' Telephone, showing lightning protector and wiring from the outside wires. The lightning protector should be placed close to where the wires enter the building from the outside.

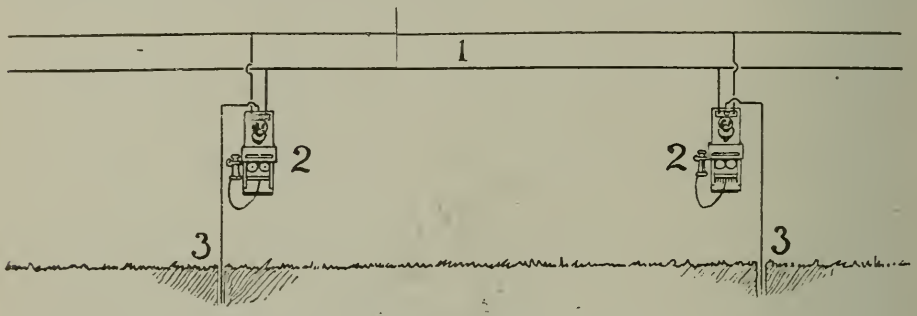
their neighbors and with the nearest town is by horse and buggy is living in a state of isolation which does not render life as enjoyable as it might otherwise be.

Much has been said and written upon the subject of keeping our boys and girls upon the farm, and the tendency of young people to forsake the certainty of a living competency in the healthy surroundings of country life for the maelstrom of city life which drags so many thousands every year into the vortex of poverty, sickness, and premature death. Is not this tendency on the part of the younger

generations due largely to the limitations which render social intercourse in the country more difficult than in the city.

These conditions, however, need no longer be endured, for with the dawn of the twentieth century the farmer, the real producer of his country's wealth, has entered a new era of cultivation through an easy mode of communication which has brought the voice of progress within hearing of every rural home, for to-day the telephone makes it possible to rid farm life of its great barrier—isolation from centres of population and business.

A few years ago the telephone was a luxury in the cities and towns, and to the farmer an impossibility. The expiry of the original "Bell" patents in the United States in 1895 was followed by a movement of the farmers in the middle West for the establishment of rural telephone service which had hitherto been denied them by the monopoly which controlled the patents. This was the beginning of what is known as the "independent telephone movement," which has grown until to-day there are ten thousand companies operating nearly five million telephones in the United States and Canada, all of which are owned and controlled by local interests, entirely separate from the "Bell" companies, which claim an



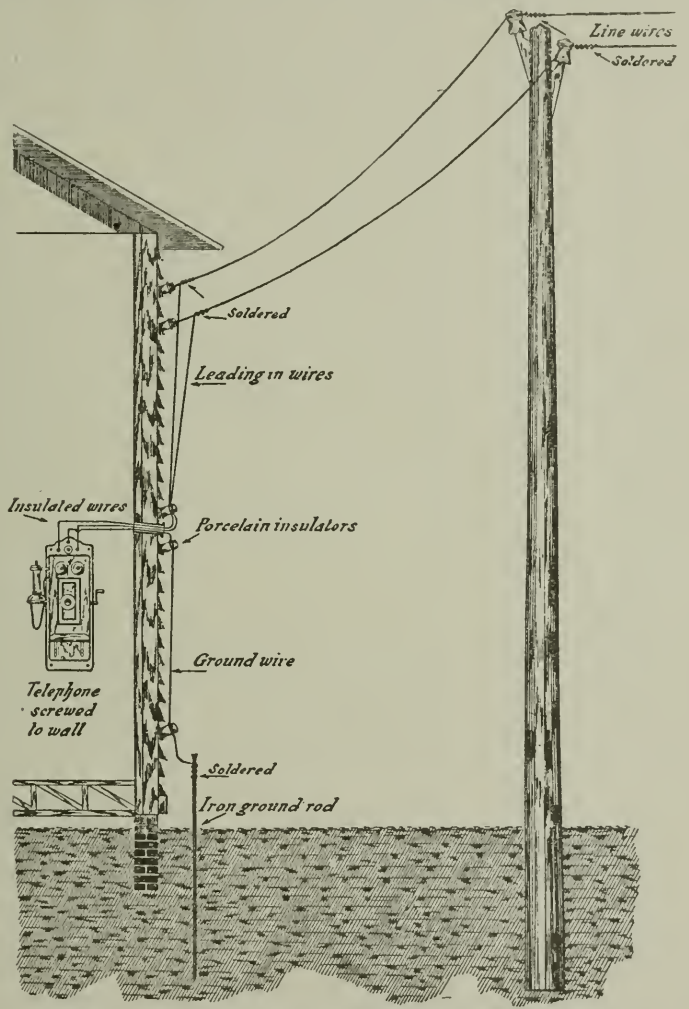
Metallic circuit party line, showing two subscribers' stations—1, main line; 2, subscribers' station; 3, ground wire.

almost equal number of subscribers. The success of this movement is in a very large measure due to the tenacity and perseverance of the farmers during the early stages of its history, in the face of many difficulties and much discouragement.

Once having acquired a knowledge of the value of a telephone service, no people have been so eager to avail themselves of its benefits as the farmers. In Iowa, which has a population equivalent to that of Ontario, there are to-day approximately 350,000 telephones, nearly one-half of which are in the homes of the farmer. The enterprising farmer has found that by having a telephone he can keep in absolute touch with the market, selling his grain, fruit, vegetables, or live stock at a time when the quotations are the most favorable. He also saves a vast amount of time in the course of the year, both on the part of his help and himself, by eliminating useless journeys for the purpose of delivering his produce or of ascertaining the status of the market. He no longer loads up his wagon, makes a long haul of many miles, only to find that the market is not to his advantage, or that there are no cars on the railway siding in which to ship his grain or other produce.

The farmer of to-day calls up the town with which he is connected, ascertains the market, gets the weather report and proceeds with his day's work, laying it out accordingly. Many a farmer has saved by selling at the right moment, or by taking advantage of weather forecasts, more than enough to pay for his telephone service for an entire decade.

When some of the farm machinery breaks down the damaged part can be replaced in a day by telephoning a supply house instead of incurring a week's delay, which formerly happened when the mails were depended on. The telephone also eliminates the possibility of mistakes which frequently occur as a result of the implement man being unable to ask and answer questions when a letter was not quite clear. In cases of accident, or sudden illness which necessitate speedy medical aid, many a life might be saved by the intervention of the telephone, when the time occupied in a long drive to summon this aid, with the possibility of finding the doctor away from home, would have been all in vain.



Subscribers' Station, showing telephone on the wall and wires from pole. While two separate iron wires are shown in the drawing, it is preferable to use insulated twisted drop wire from the pole to the house.

When fire threatens, the assistance of the whole countryside may be summoned in a few moments. Tramps and thieves invariably avoid those farms into which a telephone wire leads.

It is, perhaps, the social benefits the telephone brings into the home of the farmer which appeal most to his wife and to the younger members of his family. It may be justly claimed that the telephone has revolutionized life on the farm, by the welding together for the purpose of social intercourse the scattered homes of the farmers throughout the length and breadth of every rural community The women of the family no longer depend upon someone who goes to the post office once or twice a week for the news of the outside world. Telephone visits with neighbors and relatives are everyday affairs. Telephone concerts are sometimes indulged in where a number of farmers on the same line listen at the receiver, while the talented members of each family contribute to a programme of vocal and instrumental music. Impromptu dances, sleigh rides, parties and gatherings of every kind can be arranged by wire in a few minutes, in place of the old-time method of driving round the country after the long day's work is over.

Having stated a few of the many advantages which the telephone has brought within reach of the farming community, it is opportune to consider whether, in the rural districts of Ontario, the farmers are availing themselves of the benefits of this utility to an extent which its importance demands, and if not, what are the reasons for this lack of development. If Iowa has over 150,000 farm telephones in operation, why is it that Ontario has only 30,000? The answer to this question may be found in the fact that in Ontario the farmer has only within recent years met with any incentive to build rural telephone systems. Indeed, up to four or five years ago his efforts in this direction were discouraged by those whose business it was to furnish the public with telephone service. It was argued that the capital available was required for developing the cities and towns, and it was also claimed that rural service could not be furnished at rates which the farmers were willing to pay. For these and other reasons the farmers of Ontario remained for the most part in ignorance of the benefits which the telephone would bring to their business and home life, and even where its advantages were appreciated, they had no knowledge as to how rural telephone service could be organized and established.

Time has, however, changed these conditions and it is now possible for every farm community to secure a telephone service at very moderate cost. There are to-day between 300 and 400 rural telephone systems in Ontario, the majority of which have been organized and are owned and operated by the farmers themselves. Thus the problem of furnishing rural telephone service has been solved, and it only remains to proceed with this work by establishing systems where these do not already exist, and to develop those at present in operation until the ideal condition of "a telephone in every farm house" becomes an accomplished fact. When that time arrives, whatever reasons may be vouchsafed for the young people leaving the farm, the isolation and monotony of rural life will no longer be one of them. With good roads, a buggy in the barn, and a telephone in the house the problem of "how to keep the girls and boys on the farm" will be solved.

While the cost of establishing a rural telephone system is to a certain extent governed by local conditions, a pole line carrying one metallic circuit of standard construction may be built at approximately $80.00 per mile. Additional circuits will cost about $20.00 per mile. Each subscriber station, including telephone, lightning protectors, leading-in wires, and installation will cost from $15.00 to $20.00, according to the distance from the main line to the house. As it should be possible to secure three subscribers for each mile of line, the total cost per subscriber would be approximately $47.00. It would, therefore, be perfectly safe to estimate the capital required at $50.00 per telephone, if you are sure of securing

three to each mile of line. Two subscribers each mile would average $70.00 per telephone.

The first step towards starting the organization of a rural telephone system should be by means of a public meeting to discuss the project. This meeting should be called for the day and time best suited to the convenience of the farmers, and every effort should be made by those interested to secure a good attendance representative of the whole district. It is also desirable at these meetings to secure the presence of a speaker competent to give advice as to the best methods to adopt in carrying the organization into effect. By making enquiries beforehand it is generally possible to obtain the services of an officer of an up-to-date and successful rural company who can give the meeting the benefit of his experience. The Canadian Independent Telephone Association will upon request furnish any information or assistance in this respect, and will provide a qualified speaker upon payment of his expenses, should one not be available nearer home.

At this meeting a committee should be appointed, each member of which will undertake to canvass the farmers in his neighborhood to become subscribers to the proposed system. The area in which it is proposed to operate should be divided into districts and the committee should be chosen in such a manner as to include at least one resident of each district. This will make possible a thorough canvass, without throwing too much work upon the shoulders of any one person. The territory in which it is proposed to operate should be large enough to take in all the country contributory to the town or village which it is intended to make the terminus of the system. It is a serious mistake to organize a number of small companies operating separate lines all converging at one point, as it invariably means the overlapping of each other's territory and results in dispute between the owners of rival systems, with inevitable disadvantage to the public.

There are three methods under which a telephone system may be operated, viz.:

(1) As a joint stock company, operating for profit and paying dividends.
(2) As a co-operative association, operating at actual cost and not for profit.
(3) Under the local Municipal Telephone Act, 1908, and amendments thereto, 1910.

The cost of securing a charter of incorporation for a joint stock company is $100; that for a co-operative association operating without profit, $25. In both these cases, before a charter of incorporation will be granted the Provincial Government must be satisfied upon the following points:

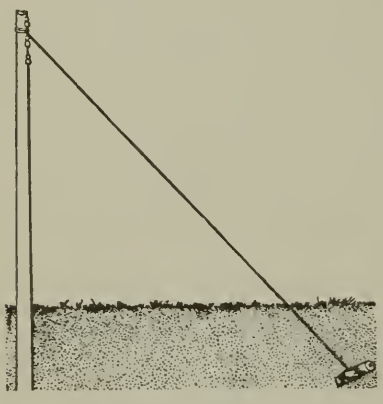
(1) That sufficient capital has been subscribed or underwritten to carry out the work proposed.
(2) That a by-law has been passed by the Council of every municipality in which it is proposed to operate giving permission to erect poles and wires along the highway. A certified copy of each by-law must accompany the application for a charter.
(3) A description of the proposed system and intended operations of the applicants, with an estimate of the cost of construction, must also be furnished.

Application for a charter must be made to the Provincial Secretary, Toronto, and in order to avoid possible confusion and delay it is desirable to engage a lawyer to prepare and forward the necessary documents.

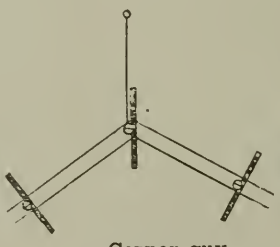
In the case of a joint stock company the capital stock to be distributed among few or many stockholders, the amount of each share being fixed at the time of organization. The business is managed by a Board of Directors elected by the

stockholders. The directors fix the rates to be charged for service, which should be adequate to produce a revenue sufficient to cover all necessary expenses and leave a profit ample to pay the stockholders a dividend of not less than six per cent. on the capital. Rates varying from $12 to $15 per annum are as a general rule considered necessary for the purpose by joint stock companies.

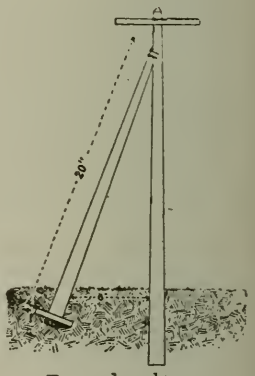
In the organization of co-operative companies it is usual to fix the amount of each share at $10, each subscriber being a stockholder, and taking a sufficient number of shares to cover the average cost per telephone of the whole system. For example, if the cost of a system of 100 telephones is estimated at $5,000, each subscriber would take five shares. Each subscriber is assessed with his share of the actual cost of operation and maintenance. This assessment would vary according to local conditions, but as a general rule it would be from $4 to $6 per annum. While very few rural companies or associations make any provision for depreciation, preferring to make special assessments for renewing worn-out plant when the necessity arises, it is a wise precaution to set aside about $3 per telephone each year as a reserve for depreciation. Such a provision will ensure the maintenance of the system in good condition for all time, without incurring the risk of having to make an assessment at the end of a few years, which the subscribers find it very difficult to meet.



Guy and anchor.



Corner guy.



Braced pole.

The Ontario Local Municipal Telephone Act, 1908, and the amendments thereto of 1910, provide what should prove to be the most simple and economical method for a rural community to establish its own telephone service, inasmuch as it enables every ratepayer to become owner of his share of the system without having to provide the whole of the necessary capital at the start, and without placing any liability upon those ratepayers who are not disposed to take telephones.

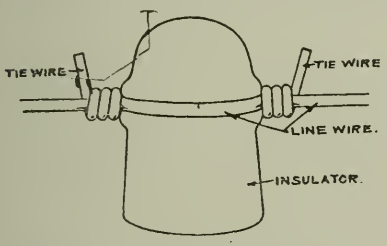
Under this Act a number of ratepayers desiring telephone service may petition the Council of their municipality asking for the provision of the necessary funds to install a system. Each petitioner or subscriber must sign an undertaking in which he agrees to repay his share of the cost of the plant in ten annual instalments of principal and interest in addition to the cost of maintenance and operation. The Council may then pass a by-law, which it is not necessary to submit to the people, providing for the carrying out of the work, and may make arrangements for obtaining a temporary loan of such money as is necessary to pay for the material and labor while the system is under construction. Within two years

from the passing of the first by-law the Council must pass a further by-law authorizing the issue of debentures for an amount sufficient to pay off all temporary loans, with such other additional amount as may be deemed necessary for extensions in the immediate future. All loans must be repaid out of the first proceeds of the sale of these debentures.

The instalments of principal and interest amount to about 13½ per cent. on the cost of construction, that is to say, if the total cost of the system averages $50 per telephone, each subscriber would pay $6.75 per annum, plus the cost of maintenance and operation. Thus for the first ten years the total annual payments would be approximately $12 per annum, and at the end of that period the instalments of $6.75 for principal and interest would cease, the future assessments being only such amounts as may be necessary to meet the actual cost of maintenance and operation, which should not exceed $5 per subscriber.

The municipality establishing a system under this Act, which is known as the "initiating municipality," may extend its system into any neighboring municipality for the purpose of giving service to any ratepayers in such municipality who may agree to the conditions required by the initiating municipality.

All payments due from subscribers are placed upon the tax roll and are collected in the same manner as taxes, being a charge against the subscribers' property. Where the system extends into other municipalities it is the duty of the Secretary-Treasurer of the initiating municipality should be a member of this them to the initiating municipality.



Insulator, showing method of tying in wires.

Iron wire joint.

It is desirable that the management of a system under this Act should be in the hands of a joint committee representing the Council and the subscribers. The Secretary-Treasurer of the initiating municipality should be a member of this committee.

Inasmuch as the provision of the necessary funds by the municipality may create a tendency to treat the question of expenditure more lightly than would be the case if the capital had to be furnished in one payment by the subscribers, great care should be taken in the matter of securing advice from the right source. Too much reliance should not be placed upon the recommendations of salesmen who are interested in making the order for equipment as large as possible, and who are sometimes responsible for increasing the cost of a plant beyond what is really necessary. The best plan is to engage the services of an independent engineer who is not interested in the sale of any particular equipment, and whose reputation depends upon securing for you the best system at the lowest cost consistent with efficiency. In the selection of telephones and switchboard, if you purchase from a manufacturer of high-grade equipment, and pay a fair price, there are few points to govern your choice, except they be in matters of design and different methods of assembling the parts. If you take the price as your standard

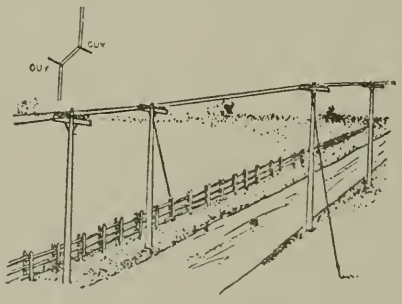
they are all equally efficient as regards the service they will render. In the laying out of a telephone system, however, and during its construction, it is possible to waste money upon extravagant and unnecessary details, and on the other hand the cost of maintenance may be unduly increased by the practice of false economy; hence the wisdom of having a reliable, independent man to consult in the initial stages of the undertaking.

Any telephone manufacturer will furnish upon application, bulletins describing in detail the various methods of building rural telephone lines and installing apparatus. The Ontario Railway and Municipal Board will also forward a copy of its specifications for the construction of rural lines to any applicant. It is, therefore, unnecessary to deal at length with this phase of the telephone business. The following points may, however, be of interest:

Poles. These should be placed as nearly as possible at equal distances of 176 feet apart, thirty to the mile.

Where only one circuit (two wires) is to be carried on brackets, 20-foot poles with 4-inch tops will serve the purpose, although 25-foot poles with 5-inch tops are preferable.

Where more than one circuit is to be carried it is good practice to use 25-foot poles with 6-inch tops, fitted with a 10-pin cross arm. This will carry five circuits and by the addition of a second cross arm, ten circuits. For heavier lines poles with 7-inch tops should be used.



Crossing a road, showing the method of placing guys.

Thirty-foot poles are necessary at road crossings, and as a rule 35-foot poles for railway crossings.

Wire. This should be No. 12 B.B. or E.B.B., the last named being the best quality. It weighs 165 lbs. per mile, or 330 lbs. per circuit mile. This should be purchased from a reliable firm and care should be taken to see that it will stand the standard test for galvanizing. Do not use fence wire.

Telephones. The best type of telephone to use is what is known as 5-bar Bridging Magnate Telephone with 1,600 ohm ringers equipped with condenser, and push button attachment for calling central without ringing other stations on the same line. The receiver should be of the concealed terminal type, having no exposed metal parts, with pure rubber shell for preference. Do not purchase cheap telephones, for these are in the end the most expensive.

Number of Stations on One Circuit. It is good practice not to put more than ten telephones on the same circuit. If good service is desired, the number of stations on one line should not exceed fifteen. It may be explained that many more telephones will talk and ring efficiently on the same line, but with an ex-

cessive number of stations the traffic becomes so heavy that the line is kept too busy to render proper service to all the subscribers.

Railway Crossings. Proper authority must be obtained before wires are erected across railway tracks. In the case of railways operating under Dominion charters, applications must be made to the Board of Railway Commissioners for Canada, Ottawa. Where an electric or steam railway is under the control of the Provincial Government application must be made to the Ontario Railway Municipal Board.

Connection With Bell System. The question of interchange of service with the lines of the Bell Telephone Company is one upon which there is much divergence of opinion among the proprietors of rural systems. Some consider it necessary to their success, while others who have tried it regret having made any such connection. A third class, which includes some of the largest individual rural companies, do not believe that "Bell" connection is at all necessary or desirable under existing conditions, arguing that while long distance service may be a convenience it is not a necessity, and that if the farmers can communicate with each other and with their business town they secure practically all the service they require. For this reason some companies and municipalities have installed town and village exchanges in preference to paying the Bell Telephone Co. a rental of from $3 to $5 a year per telephone or five to ten cents a conversation in addition to the usual fees for long distance messages, in order to obtain connection with the nearest town or village. This question, however, is one which can best be decided by the farmers themselves according to the local conditions. Where "Bell" connection is desired it is a case of securing most favorable terms from the Bell Telephone Co., and experience has shown that the best bargain is obtained by those companies which have waited until their system is in actual operation before giving the matter consideration.

Where the Bell Telephone Co. refuses connection with its system or in case of failure to come to an amicable agreement, the Board of Railway Commissioners for Canada has power to order such connection to be given upon such terms as it may decide. All agreements which the proprietors of telephone systems in Ontario make with the Bell Telephone Co. must be submitted to and be approved by the Board of Railway Commissioners for Canada, and the Ontario Railway and Municipal Board, otherwise they have no force or effect.

Ontario Telephone Act, 1910. This Act applies to every municipality, company or person in Ontario owning and operating a telephone system or line, the Bell Telephone Co. alone being excepted, by reason of its Dominion Charter.

Under This Act: (1) All telephone charges must be submitted to the Ontario Railway and Municipal Board for approval.

(2) Every telephone system or line operating in adjacent territory must interchange service with each other, either upon terms mutually agreed upon or as shall be decided by the Ontario Railway and Municipal Board. All agreements for interchange of service must be submitted to the Board.

(3) It is illegal to enter into any agreement which shall restrict competition or increase the cost of telephone service, until the Ontario Railway and Municipal Board has decided that such an arrangement is just and reasonable.

(4) In cases where a person is refused telephone service, the Ontario Railway and Municipal Board may order that such person shall be furnished with such service upon such terms as it may direct.

BEEF RINGS.

Judging from the enquiries we have received regarding Beef Rings, it is quite apparent that they are becoming popular in many sections of the Province. In sections surrounding towns and villages its full significance is not realized, but in the more isolated sections an organization of this kind should prove of inestimable value. Fresh meat in the home during the summer months is far too uncommon in many sections. This is not due to preference, but to actual necessity. Many farmers are not fortunate in having a butcher call with fresh meat each week, nor have they facilities for keeping a large quantity on hand. The result is that the farmer is compelled to kill during the winter months, and cure in salt or smoke a quantity of pork and beef, sufficient to supply the family during the summer. Naturally this is not only an undesirable form of meat supply, but it also has its effect upon the health of the family. To overcome this difficulty, farmers in many sections (usually some distance from a town, but in some cases quite near as well) have formed an organization known as a "Beef Ring," whereby they agree to kill an animal each week and divide it among the members.

The first step necessary is to obtain the names of sixteen or twenty persons who are willing to enter into the contract. They should meet during the winter months, draw up a constitution and by-laws and appoint their officers. Care should be taken in selecting the butcher and secretary. It requires a great deal of skill and thoroughness to keep the books, and see that each member receives his proper share. We add here a constitution which may be added to, or a portion omitted, as the circumstances may demand.

Constitution.

I. This Association shall be known as the ———— Mutual Beef Association, and shall consist of ———— members, whose object shall be to furnish each member with his share of fresh meat weekly during a specified season.

II. That officers shall consist of a President, Secretary and Treasurer, whose duties shall be such as usually pertain to such offices; also a Managing Committee of three members, whose duties shall be to provide a suitable place for slaughtering, settle all differences in regard to weight and quality of animals furnished, and the general oversight of the work, and any vacancy occurring in any office shall be filled by a vote of a majority of members present at a meeting appointed by the society, as hereinafter provided.

III. The officers shall continue in office for the period of one year, unless otherwise determined by a majority of said society.

IV. The President and Secretary shall be and are hereby empowered to convene all meetings considered necessary by them, and any special meeting at the request of any five members, given in writing.

V. Seven members shall constitute a quorum for the transaction of business.

VI. All persons becoming members of this society shall subscribe to the articles of this constitution, and will be governed thereby.

VII. The annual meeting shall be held at a place and on a day agreed upon, for the purpose of closing up the business of the current year, enrolment of members, election of officers, making arrangements for succeeding year's operations, and for the transaction of such other business as may be brought before the meeting, notice of which meeting shall be given each member by the Secretary.

By-Laws.

1. The society shall elect one of its members to the position of butcher (whose duties are hereinafter defined), who may secure some suitable person to perform said duties.

2. Each member shall furnish one heifer or steer, the age of which shall not exceed two years, and weighing about four hundred pounds, suitable for the purposes of the society during the season, in his proper turn, said season to consist of sixteen weeks, commencing and ending at such times as may be determined at any regular meeting of the society.

3. The order in which each member shall furnish his animal shall be decided by lot at the annual meeting, or at a meeting held at least three months prior to the day of the first killing.

4. Each member shall deliver his animal at the place of slaughter at or before 9 o'clock on the day appointed by the society for the slaughtering of each animal.

5. Each member furnishing an animal shall be entitled to and receive the rough tallow, head and heart of the same.

6. The butcher shall be the judge of the suitableness of all animals furnished, and may reject any, subject, however, to an appeal by the Managing Committee.

7. The butcher shall have authority, and it shall be his duty in fixing the price per pound of each animal delivered, to take into consideration the season of the year when such animal may be furnished, also the quality of said animal when dressed, according to a standard adopted by the society.

8. The butcher shall weigh each carcass when dressed, and keep an account of the same, giving proper credit to the member furnishing said carcass. He shall also cut and distribute weekly, to each member of the society, an equal portion of the same, as near as he can judge in the division, and keep a strict account of the amount furnished each member per week, and at the end of each season settlements shall be made with the members of the society, in accordance with the accounts kept by the butcher.

9. The distribution the butcher is required to make in accordance with the foregoing rules shall be accomplished by placing each member's portion on hooks under their respective names at the place of slaughter, or at such other place as may be agreed by the society.

10. The butcher shall market all hides and pay over to the Treasurer the money obtained by him for the same, and shall receive for his services the sum of two dollars per head for all the animals slaughtered, cut up and distributed by him.

11. The money obtained by the butcher for hides shall remain as a fund in the nands of the treasurer for the purpose of defraying the necessary expenses of the society, and settling the differences of accounts between members at the end of each season.

12. No member shall have the privilege of withdrawing from the society without the consent of a majority of said society, and in no case will a member be allowed to withdraw until his accounts are settled with the society.

13. The above articles and regulations governing this society shall remain in full force and virtue unless amended by a two-thirds vote, after a notice of such amendment has been regularly given.

Instructions for Cutting Carcass and Dividing it Among the Members.

Chart one shows side divided for 20-share beef-ring, each member getting a roast, a boil, and a slice of steak, the numbers, as below, going together:

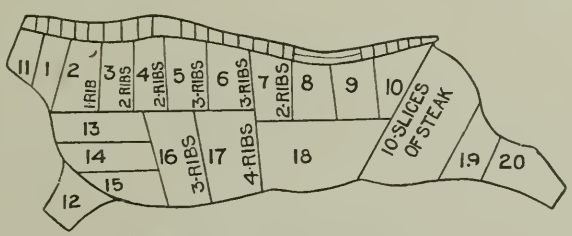


Chart for 20-share Beef Ring.

Roast.	Boil.	Steak.
1	14	1
2	13	2
3	19	3
4	16	4
5	17	5
6	18	6
7	15	7
8	12	8
9	20	9
10	11	10

Sixteen-Share Chart.

A chart for a sixteen-share beef-ring, commonly used, is as follows:

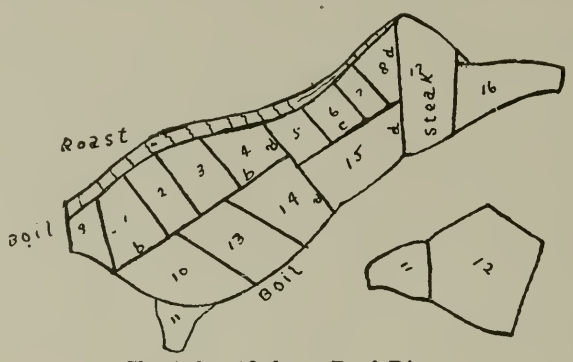


Chart for 16-share Beef Ring.

This chart represents one-half of beef lying on table ready to saw. Before letting this half down divide it in the middle by running a saw across at "a," between roasts 4 and 5, leaving two ribs on hind quarter. After laying both quarters on the table, divide fore quarter at line "b."

No. 9 represents neck. Saw neck off, leaving three joints on it.

No. 1 represents roast No. 1. Saw roast No. 1 off, leaving three joints on it.

No. 2 represents roast No. 2. Saw roast No. 2 off, leaving three joints on it.

No. 3 represents roast No. 3. Saw roast No. 3 off, leaving three joints on it.

No. 4 represents roast No. 4. Saw roast No. 4 off, leaving four joints on it.

No. 11 represents front shank. Saw front shank off above upper joint.

No. 14 represents second rib cut. Saw it off, leaving five ribs on it.

No. 13 represents first rib cut. Saw it off, leaving four ribs on it.

No. 10 represents brisket.

No. 12 represents shoulder, which lies directly under brisket, as represented in chart.

Then take the hind quarter and divide at the line "d."

No. 15 represents flank. Cut flank off at line "c."

No. 5 represents roast No. 5. Saw roast No. 5 off, with three joints on it.

Nos. 6, 7 and 8 represent sirloin. Divide these three to as nearly the same weight as possible.

No. 17 represents steak. Cut steak into slices, giving a slice to each person.

No. 16 represents hind shank after steak is taken off.

After this half of the beef has been cut up, it is divided between the first eight persons, as shown by time-table, giving each person a roast, a boil piece, and a slice of steak. Then the other half of the beef is taken down and cut up in the same manner.

John Scott, Ontario County, Ont., secretary of a 20-share beef-ring, writes us as to the system under which it is worked. It does not differ materially from what was suggested above. In the cutting up of the side, however, there is a very marked difference, each side being cut into ten portions, two of the portions being made up of two pieces each. This does not give such an equal division of meat, so far as quality is concerned, as does the dividing of the side into twenty pieces, besides steak, but the cutting up takes less work.

Chart for Twenty-Share Beef-Ring.

Mrs. E. S. Hunsberger, Waterloo County, Ont., who in 1907 sent to *The Farmer's Advocate* an account of the workings of a beef-ring of twenty members, for which her husband was butcher, also sends a chart of a side of beef as divided by them.

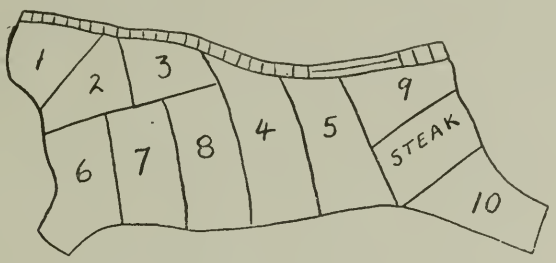


Chart for 20-share Beef Ring.

As will be seen, it is cut into ten pieces and steak. The steak is cut into eight slices, a slice to each piece except Nos. 9 and 10, which are supposed to contain steak. Each portion, as prepared and weighed, is hung on one of a row of twenty hooks, each one of which is numbered with a member's number, and has his share for that week. A reproduction of a part of sheet on which are recorded accounts with members of beef supplied and received, is given below.

Names of members	No	Moses M. Weber	Chr. P. Martin	Allan Quickfall	Jno B. Snider	Jacob Bisch	John Pomeroy	Enos Nunabuger	Dan Shantz	Amsey Schnitzer
		1	2	3	4	5	6	7	19	20
Moses M Weber	1	16 3								
Chr. P. Martin	2	18 2								
Allan Quickfall	3	18 2¾								
Jno B. Snider	4	15¾ 3								
Jacob Bisch	5	20 2								
John Pomeroy	6	18 4								
Enos Nunabuger	7	18 3¼								
Dan Shantz	19	?								
Amsey Schnitzer	20	?								

Beef-ring Account Sheet, Partial View.

Figures entered show beef received by members the first week from animal supplied by Moses M. Weber. When sheet is filled, the totals at the foot of columns, added up and down, show the dressed weights of the different animals supplied by members. Totals of columns added crosswise show the amount of meat received by the different members during the twenty weeks. The sum of the totals below and those at the right-hand side should, of course, correspond. Much care in weighing both the carcass and the pieces, and in marking down the weights, is needed in order that this may be the case.

If the instructions described above are carried out carefully, we can see no reason why an organization of this kind should not succeed. There is one great weakness in the Beef Ring at the present time—it lacks variety. It would be much more popular if it could be arranged that each member would receive beef, pork and mutton alternately. Just how this could be done we are not prepared to say, but we think it worthy of some thought during the long winter evenings. If the latter method is adopted, or already in existence, we shall be very pleased to learn how it is conducted.

WIRE WORMS AND WHITE GRUBS.

C. W. Nash, Toronto.

During the past few years ever-increasing complaints have been made by farmers and market gardeners of the damage done by wire worms and white grubs. All kinds of field crops have been attacked, though probably corn, potatoes and pasture lands have suffered most; while in gardens nothing seems exempt, when these creatures are abundant. This is by no means a new trouble; all over the world farmers have from time immemorable, had to contend with these underground pests, and have been compelled at times to adopt strenuous and expensive methods of cultivation, in order to rid their fields of them. Even at the present day in England, wire worms are considered to be the most destructive farm pest they have, and great care is taken in the preparation of the land before planting a crop liable to attack.

Wire Worms.

Wire worms are the larvæ of a large family of insects commonly known as click-beetles, or snapping-bugs (Elaters). They are readily recognizable in all their stages, and everybody knows the perfect beetles by their habit of shamming dead for a moment after being touched, and then with a sharp snap, jumping into the air, and, after alighting on their feet, scurrying away as fast as their short legs will allow. Most of our click-beetles are small, or of medium size, rarely exceeding an inch in length, though the Eyed Elater, rather a common and not an injurious species, reaches a length of two inches, or rather more. The prevailing colors of the beetles are brown, of various shades, and black; a very few being brightly marked, or metallic. The body is somewhat flattened, elongated and tapers, more or less, towards each end.

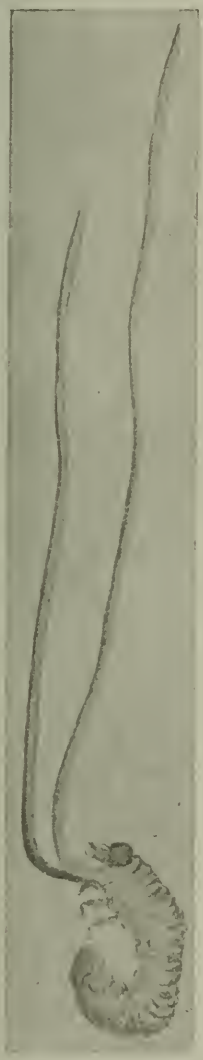
The larvæ are well named wire-worms from the form and hardness of their bodies. They are long, narrow, worm-like, very even in width, decidedly hard and of a brownish or yellowish color. Besides a short projection on the last joint, which acts as a sort of support to the long abdomen, they have three pairs of short-jointed legs in front. They are nearly all vegetable feeders, and there are but few cultivated plants they will not feed upon. It is said that rye and barley are less liable to attack than any other small cereals, and that peas and clover are not severely injured. In market gardens they are terribly destructive—potatoes, melons and tomatoes being frequently ruined by them. A notable instance of this occurred at Burlington in 1904, when the loss to some growers was almost ruinous.

Life History.

Owing to the fact that there are a large number of genera and species of the beetles which produce wire-worms, and that these appear somewhat in succession during the summer, eggs, of the different species, will be deposited at various times during the season. The habits of the subterranean species, however, may be stated in general as follows: The beetles soon after their ap-

White grub and June beetle.

Wire-worm and Click-beetle.



White grub attacked by fungus.

Wire-worm affected by Cordyceps SP.

pearance deposit their eggs in grass-land, among weeds, or wherever there is abundant vegetation of a grassy nature. The larvæ soon hatch and then feed upon the roots of plants. In this state they remain until late in the summer of the second year (some, perhaps, longer); they then change to the pupa stage. Towards autumn they become perfect beetles, but do not emerge from their cells beneath the surface of the ground until the following spring or early summer.

In land which has been under sod for several years, wire-worms are almost sure to abound; and when the sod is broken up, the larvæ will be found in every state of development. Some are very young and will require two or more years to mature; some are a year old or more, and others are about entering the pupa stage. Under these circumstances, the breaking up of the sod will not immediately destroy all the wire-worms in the soil. If the ploughing is done in the fall and the land kept well stirred or disced until winter sets in, most of the pupæ and many of the larvæ will be destroyed, but some, perhaps a good many, of the younger ones will escape by burrowing below the reach of the implements. The roots of the grasses turned under will afford them food during the following season, and so the crop may not be much injured. In the next year, however, this food supply will be exhausted and the roots of the then growing crop will be attacked, and so it is often found that wire-worms are more destructive the second season, after sod has been ploughed under, than they were the first. It is well, therefore, at this time to put in a crop as little liable to injury as possible.

In the beetle stage, these insects are not generally destructive, but one species, *Corymbites tarsalis,* has been found to be rather injurious to the apple, feeding in the flowers and destroying the essential organs and also eating the young foliage.

Remedies.

Most of the remedies which at various times were claimed as infallible, have been proven to be of little benefit. Experience and careful experiment have both shown that there is no use attempting to kill wire-worms by soaking the seed in poisonous chemicals, or by putting poisonous substances on the land. The only possible method of getting rid of them is good cultivation and a proper rotation of crops. Fields infested should be ploughed late in the fall, when the full grown larvæ, pupæ and adults will be killed by the disturbance and exposure, but as the larvæ, which have not reached full development, will escape if the weather is warm enough to allow them to retain their activity, the fall ploughing with frequent discing should be continued so long as the land can be worked.

The methods adopted in England to conquer this pest are described by Sir Richard Keene, who says: "If the land is broken for oats (our general crop), it is sure to be attacked by wire-worms, more or less; I top dress with 400 lbs. agricultural salt, 200 lbs. superphosphate and sometimes 100 lbs. nitrate of soda. I have never known this to fail if applied in time. If the land is broken in autumn to have green crops the following year; I have the land worked as much as possible and apply eight tons hot lime to the acre; lime as hot as possible."

Gas lime is also thought highly of in England, and where it can be obtained should also be effective here if applied in the fall, at the rate of about fifty bushels to the acre.

On a small scale, wire-worms may be trapped in gardens by sticking pieces of potatoes on slender sticks about eight inches long and burying the potatoes three inches deep near the rows of plants. Examine the bait every few days and kill the wire-worms found feeding upon it.

Natural Enemies.

Most birds will feed upon the beetles and their larvæ when they can get them, but the latter are so well protected by their mode of life that they only fall a prey to the few species that are specialized for digging them out, and these are fast becoming so scarce as to be incapable of keeping the insects in check. There are

but few parasites affecting wire-worms; so far in fact, I have found but one a peculiar fungus (*Cordyceps sp.*), which is, however, extremely rare and apparently quite local.

White Grubs.

The white grub is the larva of the common June beetle, an insect well known to everybody from its habit of blundering into lighted rooms in the evenings of May and early June, where it buzzes about in idiotic fashion, bumping against walls and ceiling, when sometimes, by dropping on the head of a female inmate of the room, it will cause more disturbance than is appreciated in well regulated households.

The beetle is about one inch in length, thick bodied, of a dark glossy chestnut color above, much paler below; the legs are yellowish and its breast is covered with pale yellowish hairs. The wing covers, though glossy and shining, are roughened with shallow indentations, and upon each there are two or three slightly elevated lines running lengthwise.

During the day they rest quietly, generally hidden among grass or thick weeds, and become active at night, resorting to cherry, plum and some other trees, upon the leaves of which they feed sometimes, when very abundant, entirely stripping them of their foliage, thereby badly mystifying the fruit grower who, seeing in the daytime the damage done, searches the tree for the perpetrator, and failing to find it, wonders what new pest he is up against now.

Early in June the female deposits her eggs beneath the surface of the ground, usually among grass roots. They are white, translucent and spherical, and about one-twelfth of an inch in diameter. When hatched, the small white grubs begin at once to feed on the rootlets of plants. From the time of hatching, the larvæ take nearly three years in reaching maturity as adult beetles, hence larvæ of different sizes can generally be found in the ground at the same time. They are soft and white, have a horny head of a clear, brown color and six legs, which appear to be too long for an underground insect. The hinder part of the body, which is thicker than the centre, is carved beneath, towards the thorax; this end is usually dark colored, owing to the contents of the stomach showing through the thin skin. If straightened out, the body of a full grown larva will measure an inch and a half or rather more.

When these grubs are very numerous, they so completely devour all the grass roots, where they are feeding, that the turf can be lifted by hand and rolled up as readily as if cut with a spade. At the approach of winter the larvæ burrow into the soil far enough to be protected from extreme cold, and there remain until spring renews their activities.

Upon attaining full development, which takes place in the autumn of the second year, the larva forms a cell in the ground two or three inches below the surface, and there transforms first into a pupa, and from that to the perfect beetle, which emerges in the following May or June.

There are many species of the genus *Lachnosferna* to which the June beetle belongs, and they are all more or less injurious, but as their life history is much the same, it is not necessary to refer to them individually.

Remedies.

This insect is very difficult to deal with in its underground stage. Many remedies have been suggested, but experiment has shown most of them to be worthless, and some are quite as injurious to the grass as are the grubs themselves.

A short rotation of crops, where it can be carried out, is the best preventative. Where, however, pasture land is already infested, fall ploughing in chilly weather is the best method of destroying the pest. This throws them up near the surface, where, if they are in the pupa stage, they will fail to transform, and the larvæ, if chilled, are too helpless to burrow and make new cells to protect them from the frost. It is a curious fact that while these insects in their own cells, but a few inches below the surface of the ground, can withstand the winter's cold perfectly, they cannot do so if their cell is broken up; in such case they seem invariably to perish. The cultivation also exposes them to their natural enemies, of which they have a great many; all birds and many animals being particularly fond of them. Crows and blackbirds will often follow the plough in order to pick them up as they are thrown within their reach.

Hogs appreciate them highly, and if turned into an infested field will root them out and devour them greedily. An old sow or two with litters of pigs will soon rid a considerable area of white grubs.

On a small scale, that is to say for lawns, or where only small patches in a pasture field are affected, a few ounces of bi-sulphide of carbon injected into the soil has been found effectual. Copious waterings with kerosene emulsion have been suggested and may, perhaps, be of service. It is said that after its use the grass will soon recover, but it is always advisable to help it with some more seed and a light top dressing of nitrate of soda used in the proportion of one pound to the square rod in three applications. If the lawn is small the most convenient way to apply the nitrate of soda is to dissolve it in water, one pound in five gallons, and go over it with a watering pot.

The white grubs are sometimes affected by insect parasites, which reduce their number, and there is also a curious whitish fungus which attacks and destroys them. This grows out of the thorax below the head, and running upwards often attains a length of three or four inches. Unfortunately, as agricultural conditions seem to be more and more favorable to the propagation of June beetles, their natural enemies are becoming scarcer; and that being the case, man, who is chiefly responsible for having destroyed the balance in nature, must now use his own ingenuity in restoring it.

ANNUAL REPORT

OF THE

FARMERS' INSTITUTES

OF THE

PROVINCE OF ONTARIO

1909

PART II. MEETINGS AND STATISTICS

(PUBLISHED BY THE ONTARIO DEPARTMENT OF AGRICULTURE, TORONTO.

PRINTED BY ORDER OF
THE LEGISLATIVE ASSEMBLY OF ONTARIO

TORONTO:
Printed by L. K. CAMERON, Printer to the King's Most Excellent Majesty
1909.

Printed by
WILLIAM BRIGGS,
29-37 Richmond Street West,
TORONTO

KEY TO REGULAR AND SUPPLEMENTARY MEETINGS TO BE HELD BETWEEN NOVEMBER 22nd, 1909, AND MARCH 5th, 1910.

Name.	Page.
Addington	21, 29
Brant N	19, 27
Brant S	19, 25
Bruce C	18, 23
Bruce N	18, 23
Bruce W	18, 24
Bruce S	18, 23
Carleton	22, 30
Dufferin	20, 27
Dundas	22, 30
Durham E	20, 28
Durham W	20, 28
Elgin E	19, 25
Elgin W	19, 25
Essex N	19, 25
Essex S	19, 25
Frontenac	21, 29
Frontenac C	21, 30
Glengarry	22, 30
Grenville S	22, 30
Grey C	23
Grey N	20
Grey S	18, 23
Haldimand	19, 26
Halton	18
Hastings E	21, 29
Hastings N	21, 29
Hastings W	21, 30
Huron E	18, 22
Huron S	18, 24
Huron W	18, 23
Kent E	19, 25
Kent W	19, 25
Lambton E	18, 24
Lambton W	18, 24
Lanark N	21, 30
Lanark S	21, 30
Leeds N. & Grenville	21, 30
Leeds S	21, 29
Lennox	21, 29
Lincoln	19, 26
Middlesex E	19, 25
Middlesex N	18, 24
Middlesex W.	19, 25
Monck	19, 26
Muskoka S	22
Norfolk N	19, 26
Norfolk S	19, 26
Northumberland E	21, 29
Northumberland W	21, 29
Ontario N	20, 28
Ontario S	.....
Oxford N	19, 24
Oxford S	19, 26
Parry Sound W	22
Port Carling	22
Peel	20, 28
Perth N	18, 24
Perth S	18, 24
Peterboro' E	21, 29
Peterboro' W	21, 29
Prescott	22, 30
Prince Edward	29
Renfrew N	21
Renfrew S	21
Russell	22, 30
Simcoe C	23
Simcoe E	27
Simcoe S	20, 27
Simcoe W	23
Stormont	22, 30
Union	18, 24
Victoria E	21, 28
Victoria W	21, 28
Waterloo N	20, 27
Waterloo S	26, 27
Welland	19, 26
Wellington C	20, 27
Wellington E	20, 27
Wellington S	20
Wellington W	20, 27
Wentworth N	19, 26
Wentworth S	19, 26
York E	20, 28
York N	20, 28
York W	20, 28

FARMERS' INSTITUTES OF ONTARIO

1909-10.

ANNOUNCEMENT OF SUPERINTENDENT.

We present herewith statistics for the Institute year—June, 1908-09, also announcement of meetings to be held during the season 1909-10, together with a list of speakers and subjects.

By a comparison of the past two years, it will be noted that the attendance at regular and supplementary meetings during the season 1908-09 was about 11,000 above the year before. In addition to this, we held a large number of special meetings. The summary of attendance at all meetings under the direction of this Department will be found on page 6. It must be remembered that the Institute meetings have lost their novelty, and those who attend go for the purpose of getting instruction along agricultural lines rather than for entertainment.

Special Meetings.

Special meetings in the interests of live stock, pure seed, poultry, fruit, etc., were held at a number of points during the past year, and the demand for work of a like nature is increasing. The expressions of appreciation on the part of practical farmers would indicate that this line of work is destined to play a large part in agricultural education in Ontario.

Farmers' Institute Clubs.

During the past year a number of these organizations have been established as a direct result of Farmers' Institute meetings, and, on the whole, the work accomplished has been most gratifying. A number of clubs have been formed through the efforts of district representatives of the Department of Agriculture, while others have been formed by prominent farmers in various localities, independent of the Institute. We have issued a booklet on Farmers' Institute Clubs, and shall be glad to forward the same upon application. Part I. of the 1908 Farmers' Institute Report contains considerable information upon Farmers' Institute Clubs, and we direct the attention of officers and directors to this volume. We believe that much good will result from a consideration on the part of the farmers in each locality of local conditions and possibilities. By consulting together the farmers are enabled to introduce good seed, desirable kinds of stock, etc., and inaugurate lines of work which could not well be undertaken by the individual.

Women's Institutes.

This branch of the work has met with marked success during the past year. We now have organizations at 524 points, with a membership of about 14,000, and, for the most part, regular meetings are being held by each society. Last year the total attendance at Women's Institute meetings was considerably over 116,000. Altogether, much is being done to improve home and community life. We are receiving many inquiries from those districts where organization has not yet been effected, and the prospects are for a still greater expansion in this line of work.

Future Meetings Dependent upon Appreciation Shown.

We have found it necessary this year to refuse meetings to a few places which did not show appreciation of the work last year. Those places which do not support the work during the coming winter cannot expect to have meetings during the following year. It becomes those who are interested, therefore, to do what they can to make the local meeting a success, both in attendance and participation in the discussions.

Attendance, Membership, Etc., for 1908-1909.

The weather conditions were more favorable than usual during the past season, and the effects are shown in an increased attendance and membership. It has been gratifying to note that the young men are taking a greater interest in the work of the Institute. Lack of sufficient help on the farm prevents many from attending the meetings who would otherwise do so.

The Institutes holding the largest number of meetings during the year ending May 31st, 1909, are:

Hastings, W	15	Middlesex, N.	11
Grey, C.	14	Perth, N.	11
Parry Sound, E	14	Prince Edward	11
Waterloo, S.	14	Rainy River, S.	11
Ontario, N.	13	Brant, S.	10
Peel	13	Grenville, S.	10
Simcoe, C.	13	Grey, S.	10
Waterloo, N.	13	Haldimand	10
Dufferin	12	Hastings, E.	10
Lanark, S.	12	Kent, E.	10
Oxford, N.	12	Kent, W.	10
Renfrew, N.	12	Lambton, W.	10
Wellington, C.	12	Ontario, S.	10
York, E.	12	Oxford, S.	10
York, N.	12	Victoria, E.	10
Huron, E.	11	Welland	10
Middlesex, E.	11	Wentworth, S.	10

The Institutes having the largest attendance at their meetings are as follows:

	No. of Meetings.	No. in attendance.		No. of Meetings.	No. in attendance.
Waterloo, S.	14	3,314	Peel	13	2,403
Bruce, S.	8	3,165	Perth, N.	11	2,325
Wellington, E.	8	2,885	Middlesex, N.	11	2,293
Ontario, N.	13	2,844	Oxford, N.	12	2,130
Perth, S.	8	2,730	Huron, E.	11	2,109
Waterloo, N.	13	2,484	Middlesex, E.	11	2,020

The Institutes having the largest membership for the year 1908:

Halton	640	Ontario, N.	349
Waterloo, S.	611	Middlesex, E.	347
Waterloo, N	590	Wellington, C.	346
Oxford, S	568	Dufferin	345
Perth, S.	401	Northumberland, W.	337
Huron, E.	380	York, N.	331
Perth, N.	378	Carleton	318
Essex, S.	378	Middlesex, N.	317
Oxford, N	359	Simcoe, C.	316
Peel	354	Lambton, E	315
Brant, S.	352		

Fruit Institutes.

During the season 1908-09 special Fruit Institutes were held at the following places: Beamsville, Burlington, Cobourg, Dunnville, Forest, Leamington, Meaford, Thornbury, Collingwood, Napance, Oakville, Picton, Port Perry, St. Catharines, Simcoe, Port Dover, Vittoria, Delhi, Waterford, Stoney Creek, Trenton and Whitby.

In a few instances the course consisted of only a one-day meeting. At the majority of places, however, the instruction lasted for two days, and in one or two instances three days. The total attendance at these courses was 5,665.

Local Poultry Shows.

Speakers were also sent to local poultry shows, with a view to giving instruction in poultry management and preparation for market to those who might desire the same. Five thousand seven hundred and fifty persons profited by the instruction given. The following are the places served in this way: Nov. and Dec., 1908: Berlin, Bracebridge, Collingwood, East Toronto, Hespeler, Ingersoll, New Hamburg, Woodstock; Jan. and Feb., 1909 (in order of date): Brantford, Peterboro, Napanee, Port Arthur, Midland, Owen Sound, Mitchell, Leamington, Mt. Forest, Clinton, Lindsay, Kingston, Watford, Simcoe, Spencerville, Cornwall.

Poultry Institutes.

In addition to supplying speakers for local poultry shows, education along this line was carried on at the following Poultry Institutes:

		Attendance.
Lanark	Mar. 11, 12, 1909	400
Morrisburg	Mar. 8, 9,	350
Winchester	Mar. 9, 10,	203
Uxbridge	Mar. 24, 25,	268
Total attendance		1221

Judging Classes.

Short courses in stock and seed judging were conducted at the following places: Alliston, Ayr, Beaverton, Brooklin, Cannington, Carleton Place, Cookstown, Creemore, Elmvale, Hickson, Lindsay, Nottawa, Orillia, Perth, Picton, Sunderland.

This work has been very highly appreciated by the farming community, and, without an exception, the farmers in the districts served are anxious for further instruction of the same nature. We fully expect that the demands for this class of work will increase from year to year. The total attendance at these judging classes was 14,300.

Seed and Drainage Meetings.

During the summer of 1909, speakers were sent to the following meetings, which were devoted to seed and drainage matters: Bradford, Columbus, Hillier, Jamestown, Lanark, Northport, Perth, Teeswater, Tottenham, Victoria Square and Walkerton. Total attendance, 862.

Annual Meetings.

Speakers were furnished for 38 annual meetings held between June 1st and 20th, according to the regulations governing Farmers' Institutes. For the most part the speakers were members of the Agricultural College staff. The Institutes appreciated very much the services rendered, and we believe that much good has been accomplished by bringing the farmers and the professors in closer touch by meeting together in this way.

Dairy Meetings.

In addition to the regular Farmers' Institute meetings and the special meetings recorded herewith, arrangements were made, through the Dairy Instruction Branch, to send speakers to factory meetings. These meetings were attended by the two chief instructors: Messrs. G. G. Publow, Kingston, and Frank Herns, London, and some of the men who are assisting them as instructors.

In all 333 factories were visited in this way, with an attendance of 20,418.

Special Northern Meetings.

The special meetings held throughout the northern portions of the Province, and which were attended by a gentleman and lady speaker, are recorded in Part II. of the 1909 Women's Institute Report. In all 122 places were visited. It is gratifying indeed to learn from time to time of the appreciation of the work of the Institutes, especially the women's organizations, in the newer sections of Ontario.

Meetings among French-Canadians.

At the earnest request of a number of French citizens for agricultural education in their own language, a speaker was sent to twenty-nine points in the Nipissing, Sudbury and Sturgeon Falls districts. Lists of places visited are given in Part II. of the 1909 Women's Institute Report.

Summary of Attendance

At regular, supplementary, and special Institute meetings for twelve months ending June 30th, 1909:

Regular and supplementary meetings:	
Farmers' Institutes	121,323
Women's Institutes	116,493
Special Institutes:	
Fruit Institutes	5,665
Local Poultry Shows	5,750
Poultry Institutes	1,221
Seed and Live Stock Judging Classes	14,300
Seed and Drainage Meetings	862
Factory and Creamery Meetings	20,418
Total	286,032

George A. Putnam, *Superintendent.*

ONTARIO FARMERS' INSTITUTES

OFFICERS FOR 1909-10.

Institute.		Name.	P. O. Address.
Addington	President	M. Shannon	Centreville.
	Vice-President	Robt. Nugent	Newburgh
	Secretary-Treasurer	J. B. Aylesworth	Newburgh.
Algoma, Centre	President	Henry Knight, Jr.	Sault Ste. Marie.
	Vice-President	James Nightman	Tarentorus.
	Secretary-Treasurer	G. H. Farmer	Steelton.
Algoma, East	President	Wm. Yates	Goldenburg.
	Vice-President	John Warnock	Iron Bridge.
	Secretary-Treasurer	A. H. Hagon	Sowerby.
Algoma, N.S.	President	Carson Moore	McLennan.
	Vice-President	John Armstrong	McLennan.
	Secretary-Treasurer	James Nott	McLennan.
Amherst Island	President	H. Filson	Stella.
	Vice-President	R. Kilpatrick	Stella.
	Secretary-Treasurer	W. P. Tugwell	Stella.
Brant, North	President	W. C. Good	Brantford.
	Vice-President	Frank Kitchen	St. George.
	Secretary-Treasurer	A. W. Vansickle	Onondaga.
Brant, South	President	J. H. Wooley	Burford.
	Vice-President	H. Gammon	Mohawk.
	Secretary-Treasurer	F. M. Lewis	Burford.
Bruce, Centre	President	W. R. McDonald	Ripley.
	Vice-President	J. L. Bowers	Ripley.
	Secretary-Treasurer	R. J. Nelson	Paisley.
Bruce, North	President	J. K. Livingstone	Hepworth.
	Vice-President	Wm. Laidlaw	Lion's Head.
	Secretary-Treasurer	Cecil Swale	Wiarton.
Bruce, South	President	W. H. Arkell	Teeswater.
	Vice-President	W. A. Rawand	Walkerton.
	Secretary-Treasurer	James A. Lamb	Walkerton. (Drawer 457.)
Bruce, West	President	Allen McKinnon	Pt. Elgin.
	1st Vice-President	Isaac Broadfoot	Allenford.
	2nd Vice-President	P. J. Brown	Tiverton.
	Secretary-Treasurer	J. H. Wismer	Pt. Elgin.
Carleton	President	J. E. Caldwell	City View.
	Vice-President	Wesley Graham	North Gower.
	Secretary-Treasurer	R. H. Grant	Hazeldean.
Dufferin	President	Geo. Best	Whitfield.
	1st Vice-President	W. J. Dynes	Granger.
	2nd Vice-President	W. J. Hamilton	Whittington.
	Secretary-Treasurer	Wm. Shields	Shelburne.
Dundas	President	H. J. Whittaker	Williamsburg.
	Vice-President	J. S. Kyle	N. Winchester.
	Secretary-Treasurer	J. P. Fox	Winchester.
Durham, East	President	J. Arthur Vance	Ida.
	Vice-President	W. R. N. Sharpe	Ida.
	Secretary-Treasurer	A. J. Fallis	Millbrook.
Durham, West	President	A. E. Annis	Tyrone.
	Vice-President	Milton J. Werry	Tyrone.
	Secretary-Treasurer	W. E. Pollard	Bowmanville. (Box 154.)
Elgin, East	President	Jas. H. Sheppard	Mt. Salem.
	Vice-President	E. A. Garnham	Staffordville.
	Secretary-Treasurer	F. Leeson	Aylmer.
Elgin, West	President	D. Carmichael	West Lorne.
	Vice-President	F. H. Silcox	Iona.
	Secretary-Treasurer	Arch. Maccoll	Aldborough.

Institute.		Name.	P. O. Address.
Essex, North	President	Chas. Ravanagh	Oldcastle.
	Vice-President	D. McAlister	Comber.
	Secretary-Treasurer	D. Ure	North Pelton
Essex, South	President	Philip C. Fox	Leamington.
	Vice-President	Levi C. Palmer	Kingsville.
	Secretary-Treasurer	G. W. Coatsworth	Kingsville.
Frontenac	President	Michael Traves	Latimer.
	Vice-President	D. D. Rogers	Kingston.
	Secretary-Treasurer	J. Knight	Elginburg.
Frontenac, Centre	President	Henry Drew	Long Lake.
	Vice-President	Daniel Stafford	Tichborne.
	Secretary-Treasurer	R. A. Hamilton	Godfrey.
Glengarry	President	R. R. Hunter	Maxville.
	Vice-President	Peter Chisholm	Lochiel.
	Secretary-Treasurer	J. P. McNaughton	Dominionville.
Grenville, South	President	Henry Morgatroyd	Brouseville.
	Vice-President	R. Connell	Roebuck.
	Secretary-Treasurer	G. W. Carson	Charleville.
Grey, Centre	President	W. H. Guy	Maxwell.
	Vice-President	J. R. Fawcett	Kimberley.
	Secretary-Treasurer	J. I. Graham	Vandeleur.
Grey, North	President	Wm. Bunt	Kemble.
	Vice-President	S. H. Newman	Owen Sound.
	Secretary-Treasurer	A. S. Donald	Kilsyth.
Grey, South	President	Daniel Edge	Edge Hill.
	Vice-President	John R. Philp	Maple Lawn.
	Secretary-Treasurer	Geo. Binnie	Bunessan.
Haldimand	President	J. R. Sutor	Bingham Road.
	Vice-President	A. Snell	Hagersville.
	Secretary-Treasurer	W. S. Dunnett	Lythmore.
Halton	President	Jas. Reid	Campbellville.
	Vice-President	W. A. Wilson	Georgetown.
	Secretary-Treasurer	E. F. Nixon	Ashgrove.
Hastings, East	President	J. H. Clare	Chapman.
	Vice-President	H. S. Tucker	Chapman.
	Secretary-Treasurer	H. C. Emerson	Corbyville.
Hastings, North	President	Robt. Broad	Hazard's Corners.
	Vice-President	Joseph English	Moira.
	Secretary-Treasurer	F. A. Comerford	Eldorado.
Hastings, West	President	A. S. White	Sidney Crossing.
	Vice-President	S. W. Lloyd	Wallbridge.
	Secretary-Treasurer	T. H. Ketcheson	Frankford.
Huron, East	President	Thos. McMillan	Seaforth.
	Vice-President	W. H. Fraser	Bluevale.
	Secretary-Treasurer	P. A. McArthur	Brussels.
Huron, South	President	Allen Mustard	Brucefield.
	Vice-President	J. T. Allison	Thames Road.
	Secretary-Treasurer	B. S. Phillips	Exeter.
Huron, West	President	H. J. Morris	Loyal.
	Vice-President	J. A. Mallough	Dungannon.
	Secretary-Treasurer	Wm. Baillie	Dungannon.
Kent, East	President	John McCutcheon	Croton.
	Vice-President	Wm. Henderson	Thamesville.
	Secretary-Treasurer	E. C. McGeachy	Thamesville.
Kent, West	President	F. W. Charters	Chatham.
	Vice-President	Harvey Imrie	Renwick.
	Secretary-Treasurer	J. R. Longmoore	Chatham.
Lambton, East	President	C. Hawkins	Warwick.
	Vice-President	John Forbes	Keitch.
	Secretary-Treasurer	T. A. Martin	Forest.
Lambton, West	President	Wm. Jackson	Osborne.
	Vice-President	Frank C. Pretty	Wilkesport.
	Secretary-Treasurer	Robt. J. White	Colinville.
Lanark, North	President	John Scott	Watson's Corners.
	Vice-President	A. Rankin	Middleville.
	Secretary-Treasurer	Peter Storie	Watson's Corners.
Lanark, South	President	J. W. Leaver	Perth.
	Vice-President	James Glien	Perth.
	Secretary-Treasurer	Geo. Oliver	Perth.

Institute.		Name.	P. O. Address.
Leeds, N., and Grenville	President	R. H. Earl	Merrickville.
	Vice-President	F. F. Bishop	Bishop's Mills.
	Secretary-Treasurer	G. L. Telford	Merrickville.
Leeds, South	President	W. M. Bass	Newborough.
	Vice-President	C. F. Rath	Lansdowne.
	Secretary-Treasurer	Freeman Britton	Gananoque.
Lennox	President	D. Aylesworth	Bath.
	Vice-President	T. B. Lund	Napanee.
	Secretary	D. W. Sheam	Fellows.
	Treasurer	W. N. Dollar	Napanee.
Lincoln	President	H. Usher	Queenston.
	Vice-President	R. Thompson	St. Catharines.
	Secretary-Treasurer	J. Pawling	Port Dalhousie.
Manitoulin, East	President		
	Vice-President		
	Secretary-Treasurer	A. J. Wagg	Mindemoya.
Manitoulin, West	President	Fred. Smith	Gore Bay.
	Vice-President	Edwin Beck	Gore Bay.
	Secretary-Treasurer	Andrew Hall	Gore Bay.
Middlesex, East	President	T. H. Shore	Glanworth.
	Vice-President	C. C. McCallum	Gladstone.
	Secretary-Treasurer	Jas. H. Wheaton	Thorndale.
Middlesex, North	President	Wm. Robinson	Komoka.
	Vice-President	D. A. Graham	Ivan.
	Secretary-Treasurer	W. T. Amos	Lieury.
Middlesex, West.	President	Arch. B. McDonald	Appin.
	Vice-President	Elias F. Reycraft	Glencoe.
	Secretary-Treasurer	Chas. M. Macfie	Appin.
Monck	President	R. B. Fitzgerald	Fenwick.
	Vice-President	J. N. Paget	Canborough.
	Secretary-Treasurer	J. E. Cohoe	Wellandport.
Muskoka, Centre	President	Alfred Kay	Port Sydney.
	Vice-President	E. Hamilton	Raymond.
	Secretary-Treasurer	J. H. Osboine	Utterson.
Muskoka, North	President	A. Sproat	Aspidin.
	Vice-President	R. J. S. Hill	Hillside.
	Secretary-Treasurer	W. Goldthorpe	Etwell.
Muskoka, South	President	John J. Beaumont	Bracebridge.
	Vice-President	Geo. F. Armstrong	Bracebridge.
	Secretary-Treasurer	Alexander Barron	Bracebridge.
Port Carling	President	Jos. McCully	Port Carling.
	Vice-President	Chas. H. Davidson	Brackenrig.
	Secretary-Treasurer	A. Harvey	Port Carling.
Nipissing, West	President	Onesime Larocque	North Bay.
	Vice-President	A. Lamoges	Verner.
	Secretary-Treasurer	Wm. J. Simmons	Feronia.
Norfolk, North	President	S. C. Kitchen	Boomsburg.
	Vice-President	L. C. McConnell	Delhi.
	Secretary-Treasurer	Albert Swinn	Guysborough.
Norfolk, South	President	James Symington	Port Dover.
	Vice-President	John Pow	Vittoria.
	Secretary-Treasurer	N. S. Palmerton	Walsh.
Northumberland, East.	President	J. N. Stone	Norham.
	Vice-President	Alex. Hume	Menie.
	Secretary-Treasurer	Harry Aylesworth	Norham.
Northumberland, West.	President	W. J. Westington	Plainville.
	Vice-President	James Davidson	Camborne.
	Secretary-Treasurer	Thos. Hoskin	The Gully.
Ontario, North	President	Wm. Shier	Sunderland.
	1st Vice-President	Walter Lapp	Uxbridge.
	2nd Vice-President	John Glendinning	Vallentyne.
	Secretary-Treasurer	J. W. Widdifield	Uxbridge.
Ontario, South	President	Wm. Ratcliffe	Columbus.
	Vice-President	J. N. Mark	Seagrave.
	Secretary-Treasurer	Elmer Lick	Oshawa.
Oxford, North	President	James H. King	Hickson.
	1st Vice-President	W. E. Thomson	Woodstock.
	2nd Vice-President	Wm. Affleck	Gobles.
	Secretary-Treasurer	F. W. Goble	Woodstock.

Institute.		Name.	P. O. Address.
Oxford South	President	R. A. Hawkins	Beachville.
	Vice-President	J. C. Smart	Springford.
	Secretary-Treasurer	B. G. Palmer	Norwich.
Parry Sound, East	President	Wm. Alexander	Doe Lake.
	Vice-President	E. Gough	Powassan.
	Secretary-Treasurer	Thos. Bottomley	South River.
Parry Sound, West	President	Jas. E. Taylor	McKellar.
	Vice-President	Alfred Badger	Parry Sound.
	Secretary-Treasurer	Joseph Ryder	Parry Sound.
Peel	President	E. E. Wilson	Caledon.
	1st Vice-President	P. A. Campbell	Campbell's Cross.
	2nd Vice-President	James Collins	Woodhill.
	Secretary-Treasurer	W. E. Shean	Burnhamthorpe
Perth, North	President	Jas. Hamilton	Milverton.
	Vice-President	J. M. McCallum	Shakespeare.
	Secretary-Treasurer	Wm. J. Spencer	Milverton.
Perth, South	President	L. W. F. Turner	Carlingford.
	Vice-President	Jas. More	Kirkton.
	Secretary-Treasurer	Duncan MacVennel	St. Mary's.
Peterborough, East	President	F. Birdsall	Birdsall.
	Vice-President	E. Hawthorne	Warsaw.
	Secretary-Treasurer	Chas. O'Riley	Norwood.
Peterborough, West	President	J. H. Garbutt	Peterborough.
	Vice-President	T. D. Young	Peterborough.
	Secretary-Treasurer	Wm. Collins	Peterborough. (242 Romaine St.
Prescott	President		
	1st Vice-President	Angus McKenzie	Vankleek Hill.
	2nd Vice-President	Jas. Allison	Stardale.
	Secretary-Treasurer	Wm. Macadam	Vankleek Hill.
Prince Edward	President	J. W. Hyatt	West Lake.
	Vice-President	W. B. Leavens	Chisholm.
	Secretary-Treasurer	W. A. Christy	Bloomfield.
Rainy River, South	President	W. Price	Emo.
	Vice-President	A. J. Huner	Sleeman.
	Secretary-Treasurer	T. A. Boucher	Emo.
Renfrew, North	President	Arch. Crozier	Beachburg.
	Vice-President	Dr. Forbes	Beachburg.
	Secretary-Treasurer	John Brown	Beachburg.
Renfrew, South	President	D. Muirhead	Renfrew.
	Vice-President	J. F. Blane	Renfrew.
	Secretary-Treasurer	G. MacIntyre	Renfrew.
Simcoe, Centre	President	John Anderson	Crossland.
	Vice-President	C. M. Hickling	Barrie.
	Secretary-Treasurer	Jas. Coutts	Midhurst.
Simcoe, East	President	J. S. Nelson	Price's Corners.
	Vice-President	John Wiggins	Guthrie.
	Secretary-Treasurer	R. C. Hipwell	Orillia.
Simcoe, South	President	I. N. Morton	Lefroy.
	Vice-President	Jas. Stephens	Newton Robinson.
	Secretary-Treasurer	Ed. Jeffs	Bond Head.
Simcoe, West	President	David Smith	Smithdale.
	1st Vice-President	Jno. Smith	Duntroon.
	2nd Vice-President	Robt. Murray	Avening.
	Secretary-Treasurer	J. A. McDermid	Stayner.
St. Joseph Island	President	Joseph Frarey	Richard's Landing
	Vice-President	J. E. Bishop	Marksville.
	Secretary-Treasurer	C. A. Young	Richard's Landing
Stormont	President	Isaiah McBride	Northfield Sta.
	Vice-President	A. A. McIntyre	Newington.
	Secretary-Treasurer	D. H. McDiarmid	Avonmore.
Temiscamingue	President	Jos. Henderson	Milberta.
	Vice-President	John McFarlane	New Liskeard.
	Secretary-Treasurer	John Sharp	New Liskeard.
Victoria, East	President	W. H. Cullis	Powles' Corners.
	Vice-President	Isaac H. Fee	Mt. Pleasant.
	Secretary-Treasurer	Wm. Thurston	Bobcaygeon.
Victoria, West	President	Wm. Channon	Oakwood.
	Vice-President	Andrew McKay	Woodville.
	Secretary-Treasurer	James Keith	Lindsay.

Institute.		Name.	P. O. Address.
Waterloo North	President	A. Doering	Waterloo.
	1st Vice-President	Josiah Stauffer	Waterloo.
	2nd Vice-President	M. L. Weber	St. Jacob's.
	Secretary-Treasurer	Allan Shantz	Waterloo.
Waterloo, South	President	S. S. Herner	Mannheim.
	1st Vice-President	Walter Oliver	Branchton.
	2nd Vice-President	Jas. Malone	Ayr.
	Secretary-Treasurer	Wm. Slater	Galt.
	Assistant Secretary	C. D. Brown	Hayesville.
Welland	President	W. W. Marshall	Crowland.
	Vice-President	Jas. Johnstone	Stanford.
	Secretary-Treasurer	W. H. Gainer	Welland.
Wellington, Centre	President	Thos. Dearing	Orton.
	Vice-President	Wm. Thacker	Ponsonby.
	Secretary-Treasurer	Geo. Wright	Elora.
Wellington East	President	Alfred Hutchison	Mt. Forest.
	Vice-President	J. B. Beer	Arthur.
	Secretary-Treasurer	Chester Nicholson	Mt. Forest.
Wellington South	President	John Barber	Guelph.
	1st Vice-President	Samuel Young	Guelph.
	2nd Vice-President	J. A. Cockburn	Aberfoyle.
	Secretary-Treasurer	G. B. Hood	Guelph.
Wellington, West	President	Fred. Wilford	Hollen.
	Vice-President		
	Secretary-Treasurer	E. G. Henry	Drayton.
Union	President	Alex. Drummond	Clifford.
	Vice-President	John Pritchard	Redgrave.
	Secretary-Treasurer	David Campbell	Clifford.
Wentworth, North	President	Wm. Drummond	Waterdown.
	1st Vice-President	Ross Shaver	Westover.
	2nd Vice-President	W. R. Flatt	Waterdown.
	Secretary-Treasurer	Albert Purnell	Puslinch.
Wentworth, South	President	Elmer Dyment	Copetown.
	Vice-President	Asa Choate	N. Glanford.
	Secretary-Treasurer	Erland Lee	Stoney Creek.
York, East	President	Geo. Robinson	Markham.
	Vice-President	W. G. Rennie	Ellesmere.
	Secretary-Treasurer	A. J. Reynolds	Scarborough Jct.
York, North	President	Thos. Spaulding	Aurora.
	Vice-President	Herb. E. Ross	Strange.
	Secretary-Treasurer	Simeon Lemon	Kettleby.
York, West	President	Thos. Griffith	Weston.
	Vice-President	A. T. Orth	Kleinburg.
	Secretary-Treasurer	R. L. Crawford	Emery.

REPORTS OF LOCAL FARMERS' INSTITUTES

INSTITUTE DISTRICT.	Membership for year ending December, 1908.	Membership for six months ending June, 1909.	No. of Meetings held.	Total attendance.	No. of papers read or addresses delivered.	Receipts. Cash on hand per last report.	Members' fees.	Grants.	Receipts from conventions and excursions.	Miscellaneous.
						$ c.	$ c.	$ c.	$ c.	$ c.
1 Addington	77	69	8	277	17	14 42	17 25	50 00	.....	.....
2 Algoma, Centre	77	48	6	643	40	155 21	13 25	50 00	.....	.....
3 Algoma, East	58	72	9	290	18	22 70	4 00	25 00	11 37	.....
4 Algoma, North Shore	93	82	7	372	15	58 52	21 00	25 00	6 50	.....
5 Amherst Island	71	47	4	125	5	0 12	23 50	50 00	.....	.....
6 Brant, North	260	224	9	1,183	32	121 75	45 40	50 00	60 24	.....
7 Brant, South	399	352	10	1,385	52	61 14	83 75	50 00	127 10	.....
*8 Brockville	106	.....	10	380	20	.....	.....	.....	.....	.....
9 Bruce, Centre	138	127	8	1,178	25	256 79	34 00	50 00	62 87	.....
10 Bruce, North	141	134	1	592	14	171 15	27 05	25 00	38 40	.....
11 Bruce, South	235	180	8	3,165	36	130 16	56 50	50 00	46 33	.....
12 Bruce, West	304	297	5	858	19	204 78	74 00	50 00	45 61	0 50
13 Carleton	254	318	8	1,189	32	36 34	63 00	50 00	.....	.....
14 Dufferin	366	345	12	1,077	73	99 27	85 25	50 00	27 30	5 23
15 Dundas	188	174	5	825	14	187 66	45 25	49 85	5 78	.....
16 Durham, East	193	253	12	690	32	164 99	62 75	50 00	14 65	.....
17 Durham, West	146	154	7	420	14	304 14	40 00	49 90	82 65	3 65
18 Elgin, East	305	306	7	680	25	114 15	75 75	50 00	70 75	2 98
19 Elgin, West	173	129	6	695	25	24 36	32 50	50 00	.....	.....
20 Essex, North	149	158	9	1,150	31	50 00	39 50	50 00	.....	.....
21 Essex, South	234	378	9	1,080	38	12 42	101 75	50 00	.....	.....
22 Frontenac	34	79	6	705	18	34 08	23 75	75 00	.....	.....
23 Frontenac, Centre	107	77	6	785	15	16 10	14 60	50 00	.....	.....
24 Glengarry	249	277	7	1,350	30	22 39	74 25	50 00	.....	.....
25 Grenville, South	162	140	10	1,234	48	10 51	35 50	50 00	.....	.....
26 Grey, Centre	247	250	14	1,572	59	28 76	62 30	50 00	68 75	0 15
27 Grey, North	299	273	9	1,292	27	137 65	73 25	50 00	33 56	9 23
28 Grey, South	260	195	10	1,550	34	26 20	53 75	50 00	161 65	101 00
29 Haldimand	373	271	10	1,875	16	241 69	70 25	75 00	.....	17 30
30 Halton	739	640	9	1,808	48	177 30	134 95	50 00	135 00	64 50
31 Hastings, East	107	131	10	1,126	35	36 18	31 25	50 00	.....	17 70
32 Hastings, North	203	199	9	570	13	0 40	49 75	50 00	.....	.....
33 Hastings, West	207	141	15	717	30	45 11	35 25	50 00	.....	.....
34 Huron, East	320	380	11	2,109	45	159 09	99 25	25 00	13 26	3 82
35 Huron, South	186	171	8	1,251	30	24 23	43 75	50 00	.....	.....
36 Huron, West	198	192	9	1,510	33	39 80	51 00	50 00	40 43	.....
37 Kent, East	227	268	10	826	20	7 95	70 50	50 00	.....	.....
38 Kent, West	202	291	10	693	28	16 43	49 25	50 00	.....	.....
39 Lambton, East	165	315	9	1,585	29	215 58	79 25	50 00	.....	.....
40 Lambton, West	288	271	10	695	54	122 58	72 25	50 00	38 85	.....
41 Lanark, North	93	43	6	452	7	11 10	21 50	50 00	.....	.....
42 Lanark, South	136	96	12	484	43	.....	16 50	50 00	.....	7 20
43 Leeds, N., & Grenville	156	142	8	788	19	.....	35 00	50 00	.....	.....
44 Leeds, South	161	204	8	1,480	37	4 65	55 75	50 00	.....	.....
45 Lennox	106	151	7	378	22	31 63	37 75	50 00	.....	.....
46 Lincoln	232	239	8	1,545	38	142 20	59 00	55 00	34 05	.....
47 Manitoulin, East	82	95	17	733	32	21 51	24 75	25 00	.....	0 50
48 Manitoulin, West	70	82	11	604	22	.....	16 75	25 00	.....	.....
49 Middlesex, East	279	347	11	2,020	39	170 32	81 75	50 00	81 25	.....
50 Middlesex, North	269	317	11	2,293	50	130 41	76 75	50 00	47 75	12 84
51 Middlesex, West	149	162	8	600	22	73 61	44 00	50 00	.....	.....
52 Monck	177	184	7	1,021	28	1 88	46 00	55 00	.....	.....
53 Muskoka, Centre	64	74	6	230	11	.....	18 00	25 00	.....	.....
54 Muskoka, North	91	106	8	479	11	.....	31 50	25 00	10 00	1 50
55 Muskoka, South	114	52	8	180	12	13 92	15 00	25 00	.....	0 36

*Disbanded.

FOR YEAR ENDING JUNE 30TH, 1909.

Balance due Treasurer.	Total receipts.	Expenditure.										No.
		Due Treasurer per last report.	Expense for meetings.	Officers' and Secretary's salaries and expenses.	Postage and stationery.	Printing and advertising.	Lecturers' expenses, and wages.	Periodicals for members.	Miscellaneous.	Total expenditure.	Balance on hand.	
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	
.....	81 67	.....	18 00	20 00	9 85	13 75	3 00	.....	6 00	70 60	11 07	1
.....	218 46	....	3 00	16 00	2 45	23 75	16 00	.....	30 00	91 20	127 26	2
.....	63 07	.....	12 00	25 00	1 00	4 40	16 00	.....	.....	58 40	4 67	3
.....	111 02	.....	6 00	27 25	3 30	7 50	5 75	.....	2 50	52 30	58 72	4
.....	73 62	.....	13 50	10 00	2 45	2 00	.....	.....	45 40	73 35	0 27	5
.....	277 39	.....	50 92	49 00	4 44	17 62	6 00	.....	33 05	161 03	116 36	6
.....	321 99	.....	56 90	60 00	6 09	29 75	23 50	.....	97 20	273 44	48 55	7
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	8
.....	403 66	....	30 30	64 45	7 75	.. ...	33 85	4 50	15 00	155 85	247 81	9
.....	261 60	.....	22 30	45 80	5 86	16 70	.....	.....	17 90	108 56	153 04	10
.....	282 99	.....	76 50	40 00	17 00	43 87	4 50	.....	13 50	195 37	87 62	11
.....	374 89	.....	8 20	45 26	19 87	20 80	.....	50 75	78 75	223 63	151 26	12
.....	149 34	.....	26 25	50 00	14 10	11 75	.....	....	6 80	108 90	40 44	13
.....	267 05	.....	48 45	66 60	5 58	16 70	27 00	.....	17 00	181 33	85 72	14
.....	288 54	.....	18 60	42 00	4 19	18 25	2 25	.....	25 64	110 93	177 61	15
.....	292 39	.....	.....	62 00	5 95	27 00	18 00	.. ...	39 05	152 00	140 39	16
.....	482 34	.....	20 40	52 00	3 82	41 18	7 00	.....	18 45	142 85	339 49	17
.....	313 63	.....	.....	36 95	2 31	34 75	13 20	.....	45 30	132 51	181 12	18
.....	106 86	.....	20 20	30 00	9 75	21 55	14 60	.....	6 25	101 35	5 51	19
.....	139 50	.....	15 30	15 00	2 25	20 65	30 00	.....	.....	83 20	56 30	20
.....	164 17	.....	6 00	50 40	6 50	17 00	16 45	.....	6 00	102 35	61 82	21
.....	132 83	.....	8 00	20 00	2 06	22 09	7 40	.....	.....	59 55	73 28	22
.....	80 70	.....	10 00	33 00	5 67	9 50	10 65	.....	.....	68 82	11 88	23
.....	146 64	.....	41 40	30 00	2 75	25 25	4 50	.....	5 00	108 90	37 74	24
.....	96 01	.....	7 25	38 50	5 68	16 65	14 70	.....	11 10	93 88	2 13	25
. ....	209 96	.....	113 55	43 50	4 17	22 25	.....	.....	19 07	202 54	7 42	26
.....	303 69	.....	51 55	66 25	10 38	18 15	13 50	.....	16 00	175 83	127 86	27
.....	392 60	.....	71 00	76 95	5 02	48 30	8 50	119 95	22 90	352 62	39 98	28
.....	404 24	.....	67 00	105 95	12 90	39 50	24 75	.....	106 08	356 18	48 06	29
.....	561 75	.....	67 50	75 00	14 25	39 08	45 75	.....	100 60	342 18	219 57	30
.....	135 13	....	26 00	35 00	10 00	18 25	29 50	.....	0 10	118 85	16 28	31
.....	100 15	.....	45 00	39 50	5 00	10 00	.....	.....	.....	99 50	0 65	32
.....	130 36	.....	19 00	36 00	3 90	12 50	12 75	.....	3 50	87 65	42 71	33
.....	300 42	.....	66 65	55 50	9 73	23 00	27 25	.....	15 00	197 13	103 29	34
67 82	185 80	.....	74 35	38 10	3 11	56 14	8 00	.....	6 10	185 80	.....	35
.....	181 23	.....	51 45	62 00	6 00	11 31	.....	.....	30 00	160 76	20 47	36
.....	128 45	.....	8 00	33 20	9 27	18 50	27 20	.....	.....	96 17	32 28	37
.....	115 68	.....	39 75	28 25	8 60	8 75	11 75	.....	.....	97 10	18 58	38
.....	344 83	.....	51 00	72 70	6 50	23 60	22 85	.....	166 58	343 23	1 60	39
.....	283 68	.....	55 20	56 00	5 46	21 85	18 00	.....	19 50	176 01	107 67	40
.....	82 60	.....	39 10	27 00	2 50	5 00	6 00	.....	.....	79 60	3 00	41
6 13	79 83	3 08	16 00	25 00	1 75	21 50	.....	.....	12 50	79 83	.....	42
99 58	184 58	.....	20 10	8 00	11 85	14 85	.....	.....	129 78	184 58	.....	43
42 10	152 50	.....	108 25	15 00	2 00	13 50	12 00	.....	1 75	152 50	.....	44
.....	119 38	.....	6 00	31 00	1 50	7 50	22 50	.....	.....	68 50	50 88	45
.....	290 25	.....	16 00	30 00	5 44	47 76	52 05	.....	26 00	177 25	113 00	46
.....	71 76	.....	0 25	13 50	2 38	9 25	15 25	.....	.....	40 63	31 13	47
1 31	43 06	2 20	2 00	15 00	1 26	3 25	18 50	.....	85	43 06	.....	48
.....	383 32	.....	130 40	40 00	10 95	50 10	32 00	18 00	16 90	298 35	84 97	49
.....	317 75	.....	66 00	88 05	6 89	31 75	26 50	.....	30 00	249 19	68 56	50
.....	167 61	.....	19 35	38 00	6 95	11 25	14 70	.....	.....	90 25	77 36	51
.....	102 88	.....	15 60	27 00	3 50	16 00	24 35	.....	5 00	91 45	11 43	52
.....	43 00	0 58	9 78	12 00	1 65	8 50	.....	.....	3 60	36 11	6 89	53
8 75	76 75	9 00	18 30	25 00	1 55	9 75	13 00	.....	0 15	76 75	.....	54
.....	54 28	.....	21 87	15 00	1 03	13 25	.....	....	1 70	52 85	1 43	55

REPORTS OF LOCAL FARMERS' INSTITUTES

INSTITUTE DISTRICT.	Membership for year ending December, 1908.	Membership for six months ending June, 1909.	No. of Meetings held.	Total attendance.	No. of papers read or addresses delivered.	Receipts. Cash on hand per last report.	Members' fees.	Grants.	Receipts from conventions and excursions.	Miscellaneous.
						$ c.	$ c.	$ c.	$ c.	$ c.
56 Port Carling	27	24	4	201	8	.....	.....	.....	.....	.....
57 Nipissing, West	11	30	4	70	8	16 25	2 75	25 00	.....	.....
58 Norfolk, North	258	265	18	634	36	58 67	69 50	50 00	28 64	.....
59 Norfolk, South	151	143	7	557	17	5 72	35 25	50 00	6 99	.....
60 Northumberland, E.	159	152	8	1,480	26	6 60	38 25	50 00	4 00	2 00
61 Northumberland, W.	135	337	7	1,455	37	59 70	83 50	50 00	.....	.....
62 Ontario, North	215	349	13	2,844	64	51 35	95 50	75 00	117 90	1 15
63 Ontario, South	215	278	10	845	41	147 82	78 00	50 00	58 05	.....
64 Oxford, North	252	359	12	2,130	59	68 00	92 50	50 00	97 90	.....
65 Oxford, South	549	568	10	1,569	45	5 60	144 50	50 00	87 65	1 50
66 Parry Sound, East	117	15	14	1,083	14	104 01	21 00	31 00	128 35	.....
67 Parry Sound, West	70	61	6	159	12	.....	11 75	.....	.....	.....
68 Peel	443	354	13	2,403	57	40 23	103 00	75 00	145 25	22 15
69 Perth, North	322	378	11	2,325	43	140 16	94 00	50 00	164 60	4 75
70 Perth, South	381	401	8	2,730	39	367 02	100 00	50 00	95 30	.....
71 Peterboro, East	115	88	8	1,950	38	26 19	20 00	50 00	14 65	3 25
72 Peterboro, West	175	187	7	1,085	44	39 49	45 50	50 00	20 40	.....
73 Prescott	76	155	5	272	11	65 22	13 75	50 00	.....	.....
74 Prince Edward	199	241	11	930	34	63 59	59 50	50 00	18 06	.....
75 Rainy River, South	68	14	11	372	2	47 91	10 00	25 00	.....	.....
76 Renfrew, North	100	75	12	695	16	.....	18 25	50 00	.....	.....
77 Renfrew, South	120	17	6	659	28	54 85	29 00	50 00	33 40	.....
78 Russell	321	.....	4	260	8	.....	.....	.....	.....	.....
79 Simcoe, Centre	304	316	13	1,101	48	262 38	64 40	40 00	97 85	.....
80 Simcoe, East	109	183	8	467	24	151 36	30 00	40 00	65 27	5 55
81 Simcoe, South	167	240	9	1,288	29	58 60	56 50	40 00	.....	17 60
82 Simcoe, West	158	204	7	1,315	36	46 60	53 75	40 00	36 30	.....
83 St. Joseph Island	55	36	10	316	20	1 47	10 00	49 99	.....	.....
84 Stormont	286	234	11	1,246	45	22 55	57 50	25 00	.....	.....
85 Temiscaming	84	123	20	956	40	39 66	18 65	.....	.....	.....
86 Victoria, East	184	142	10	1,304	35	7 54	46 00	58 00	29 55	.....
87 Victoria, West	168	169	6	829	39	33 96	59 75	50 00	32 01	.....
88 Waterloo, North	645	590	13	2,484	49	25 87	144 50	50 00	69 16	4 00
89 Waterloo, South	764	601	14	3,314	76	1 60	182 50	50 00	89 16	51
90 Welland	295	303	10	987	36	249 73	72 25	50 00	69 16	40 50
91 Wellington, Centre	532	346	12	1,749	61	40 87	88 00	50 00	21 20	1 75
92 Wellington, East	244	252	8	2,885	35	9 91	70 00	50 00	17 75	3 18
93 Wellington, South	433	280	5	710	6	106 00	558 50	50 00	.....	13 00
94 Wellington, West	205	222	6	1,340	6	184 77	55 50	50 00	100 00	.....
95 Union	120	114	7	900	13	124 40	34 75	37 50	24 25	2 76
96 Wentworth, North	312	274	9	1,372	32	22 97	72 75	50 00	.....	.....
97 Wentworth, South	298	225	10	1,572	59	.....	73 25	50 00	29 25	.....
98 York, East	276	211	12	1,018	39	10 98	57 00	50 00	56 00	13 39
99 York, North	206	331	12	1,180	52	51 72	77 00	25 00	50 33	.....
100 York, West	120	233	7	1,202	40	35 05	56 25	50 00	103 95	.....
Total	21,163	20,822	911	121,323	3,089	7,010	5,754	4,471	3,176	388

FOR YEAR ENDING JUNE 30TH, 1909—Continued.

Balance due Treasurer.	Total receipts.	Expenditure. Due Treasurer per last report.	Expense for meetings.	Officers' and Secretary's salaries and expenses.	Postage and stationery.	Printing and advertising.	Lecturers' expenses, and wages.	Periodicals for members.	Miscellaneous.	Total expenditure.	Balance on hand.	No.
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	56
.....	44 00	.....	9 00	14 65	2 00	2 25	.....	.....	.....	27 90	16 10	57
.....	206 81	.....	39 35	50 00	11 53	17 90	34 65	.....	10 25	163 68	43 13	58
2 56	100 52	.....	8 50	49 10	3 48	18 49	.....	.....	20 95	100 52	.....	59
.....	100 85	....	22 00	27 90	3 00	17 50	21 75	.....	.....	92 15	8 70	60
.....	193 20	.....	65 05	37 40	1 50	20 20	6 60	.....	11 25	141 40	51 80	61
.....	340 90	.....	37 70	162 45	10 45	43 25	39 00	.....	7 95	300 80	40 10	62
.....	333 87	.....	67 05	50 00	11 22	64 10	7 00	.....	5 00	204 37	129 50	63
.....	308 40	.....	63 13	75 45	10 50	80 10	69 05	.....	5 65	303 88	4 52	64
.....	289 25	.....	38 25	62 80	19 50	83 09	34 35	.....	32 64	270 63	18 62	65
.....	284 36	.....	66 80	79 80	16 42	35 05	.....	.....	10 00	208 07	76 29	66
.....	11 75	.....	6 00	.....	1 35	.....	.....	.....	.....	7 35	4 40	67
.....	385 63	.....	110 50	102 85	9 97	55 25	30 00	.....	53 75	362 32	23 31	68
.....	453 51	.....	32 50	81 10	5 26	69 13	49 60	.....	50 50	288 09	165 42	69
.....	612 32	.....	173 30	91 10	14 86	74 15	6 85	.....	11 20	371 46	240 86	70
.....	114 09	.....	17 40	37 20	2 25	19 75	15 30	.....	10 00	101 90	12 19	71
.....	155 39	.....	13 00	30 00	12 00	44 90	17 65	.....	.....	117 55	37 84	72
.....	128 97	.....	8 70	20 00	3 02	11 75	1 50	.....	6 55	51 52	77 45	73
.....	191 15	.....	11 90	20 00	2 75	27 40	35 00	.....	14 00	111 05	80 10	74
.....	82 91	.....	8 00	15 00	2 90	16 00	13 25	.....	.....	55 15	27 76	75
4 96	73 21	1 91	33 05	25 00	6 25	7 00	.....	.....	.....	73 21	.....	76
.....	167 25	.....	13 00	22 00	2 30	44 40	8 50	.....	6 14	96 34	70 91	77
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	78
.....	464 63	.....	87 40	100 00	2 96	25 25	18 00	.....	35 00	268 61	196 02	79
.....	292 18	.....	41 30	46 00	5 51	34 75	3 50	.....	19 40	150 46	141 72	80
.....	172 70	.....	20 15	23 90	6 65	19 60	43 70	.....	18 60	132 60	40 10	81
.....	176 65	.....	84 85	37 00	2 00	8 15	15 25	1 00	19 75	168 00	8 65	82
.....	61 46	.....	.....	25 00	3 00	9 60	.....	.....	13 06	50 66	10 80	83
14 80	119 85	.....	31 25	37 50	2 25	19 00	24 85	.....	5 00	119 85	.....	84
.....	58 31	.....	50	.....	3 45	17 13	.....	.....	.....	21 08	37 23	85
.....	141 09	.....	30 25	20 00	5 21	22 75	21 70	.....	5 00	104 91	36 18	86
.....	175 72	.....	36 90	25 00	22 15	22 25	9 45	21 65	5 00	142 40	33 32	87
36 82	330 35	.....	57 25	104 50	26 10	43 00	60 15	.....	39 35	330 35	.....	88
.....	323 77	.....	106 62	147 00	5 71	32 45	.....	.....	30 50	322 28	1 49	89
.....	481 64	.....	36 00	70 85	5 60	23 88	31 15	.....	36 60	203 48	278 16	90
18 16	219 98	.....	64 15	61 02	6 91	13 75	25 45	.....	48 70	219 98	.....	91
.....	150 84	.....	34 50	38 60	5 25	29 07	27 40	.....	10 00	144 82	6 02	92
.....	727 50	.....	11 73	56 00	9 50	32 45	.....	.....	495 30	604 98	122 52	93
.....	390 27	.....	44 50	36 00	10 50	29 40	10 25	.....	30 00	160 65	229 62	94
.....	223 66	.....	21 25	35 75	4 20	15 25	21 85	.....	25 00	123 30	100 36	95
.....	145 72	.....	22 15	45 20	5 37	14 75	.....	.....	7 20	94 67	51 05	96
18 35	170 85	30 65	50 20	30 00	13 50	41 50	.....	.....	5 00	170 85	.....	97
.....	187 37	.....	24 90	62 13	7 23	19 75	36 01	.....	25 00	175 02	12 35	98
.....	204 05	.....	29 25	4 80	7 99	19 75	57 50	.....	5 00	124 29	79 76	99
.....	245 25	.....	16 97	91 40	15 50	56 25	15 75	.....	21 75	217 62	27 63	100
321	21,120	47	3,572	4,314	655	2,398	1,592	216	2,409	15,123	5,997	

INSTITUTE MEETINGS AND DELEGATES THEREFOR.

REGULAR MEETINGS.

1909-10.

It is usual to have afternoon and evening sessions at each place, the former at 1.30, 2.00, or 2.30, and the latter at 7.30 or 8.00 o'clock. The exact hour of meeting is decided by the officers of the Institute concerned, and announcements made accordingly. "Aft." indicates an afternoon meeting only; "Evg." an evening meeting only.

Division 1.

C. W. Nash, 94 Lee Ave., Toronto, Jan. 5 to Feb. 1.
R. B. McLean, Kippen, Jan. 5 to 11.
R. Murphy, Rosemont, Jan. 18 to Feb. 1.
Mrs. Woelard, Forest, Jan. 5, 6, 11 and 12.
Mrs. Watts, Clinton, Jan. 15 and 17.

1	Auburn, Temperance Hall	West Huron	Jan. 5
2	Kintail, Young's Hall	West Huron	" 6
3	Ripley, Township Hall	Centre Bruce	" 7
4	Kincardine, Town Hall	Centre Bruce	" 8
5	Teeswater, Temperance Hall	South Bruce	Jan. 10-11
6	Brussels, Town Hall	East Huron	Jan. 11
7	Gorrie, Town Hall	East Huron	" 12
8	Durham, Town Hall	South Grey	" 13
9	Hanover, Town Hall	South Grey	" 14
10	Wiarton, Town Hall	North Bruce	" 15
11	Spring Creek, School House	North Bruce	" 17
12	Tara, Vandusen's Hall	West Bruce	" 18
13	Pt. Elgin, Town Hall	West Bruce	" 19
14	Lakelet, Bushfield's Hall	Union	" 20
15	Lavery's, School House	Union	" 21
16	Norval, Temperance Hall	Halton	" 22
17	Ballinafad, Temperance Hall	Halton	" 24
18	Brookville, Village Hall	Halton	" 25
19	Campbellville, Orange Hall	Halton	" 26
20	Kilbride, McGregor's Hall	Halton	" 27
21	Nelson, Village Temperance Hall	Halton	" 28
22	Bronte, Orange Hall	Halton	" 29
23	Postville, Council Chamber	Halton	" 31
24	Sheridan, Temperance Hall	Halton	Feb. 1

Division 2.

Anson Groh, Preston, Jan. 5 to 29.
R. W. Grierson, Oshawa, Jan. 5 to 11; 24 to 29.
Mrs. Campbell, Windsor, Jan. 7 to 8; 12 to 22; 26 to 29.

1	Milverton, Cook's Hall	North Perth	Jan. 5
2	Shakespeare, Temperance Hall	North Perth	" 6
3	Mitchell, Town Hall	South Perth	" 7
4	St. Mary's, Town Hall	South Perth	" 8
5	Brucefield, Dickson's Hall	South Huron	" 10
6	Exeter, Town Hall	South Huron	" 11
7	Ailsa Craig, Town Hall	South Huron	" 12
8	Beechwood (Fernhill P.O.), Maccabees' Hall	North Middlesex	" 13
9	Coldstream, Town Hall	North Middlesex	" 14
10	Komoka, Scoyne's Hall	North Middlesex	" 15
11	Petrolia, Town Hall	West Lambton	" 17
12	Brigden, McKenzie's Hall	West Lambton	" 18
13	Shetland, Badgley's Hall (evg.)	East Lambton	" 19
14	Inwood, Orange Hall	East Lambton	" 20
15	Aberfeldy, School House	East Lambton	" 21

16	Alvinston, Town Hall (aft.)	East Lambton	Jan.	22
17	Walker's, School House	West Middlesex	"	24
18	Melbourne, Woodmen's Hall (aft.)	West Middlesex	"	25
19	Middlemiss, Village Hall (evg.)	West Middlesex	"	25
20	Thorndale, Harding's Hall	East Middlesex	"	26
21	Harrietsville, Oddfellows' Hall	East Middlesex	"	27
22	Kintore, Temperance Hall	North Oxford	"	28
23	Bright, Duncan's Hall	North Oxford	"	29

DIVISION 3.

J. W. Clark, Cainsville, Jan. 5 to 29.
P. E. Angle, B.S.A., Simcoe, Jan. 5 to 8.
D. Johnson, Forest, Jan. 14 to 18.
G. H. Carpenter, Fruitland, Jan. 27 to 29.
Miss G. Carter, Guelph, Jan. 10, 11.
Mrs. Watts, Clinton, Jan. 19 to 21.

1	Bealton, Bealton's Hall	North Norfolk	Jan.	5
2	Waterford, Town Hall	North Norfolk	"	6
3	Delhi, Morgan's Hall	North Norfolk	"	7
4	Portland, Town Hall	North Norfolk	"	8
5	Norwich, Town Hall	South Oxford	"	10
6	Mt. Elgin, Foresters' Hall	South Oxford	"	11
7	Aylmer, Opera House	East Elgin	Jan.	14-15
8	Shedden, Morrison's Hall	West Elgin	Jan.	17
9	West Lorne, Township Hall	West Elgin	"	18
10	Kent Centre, K. C. Hall	East Kent	"	19
11	Botany, School House	East Kent	"	20
12	Croton, Young's Hall	East Kent	"	21
13	Chatham, Church	West Kent	"	22
14	Eberts, Town Hall	West Kent	"	24
15	Tupperville, Church	West Kent	"	25
16	Baldoon, Church	West Kent	"	26
17	Woodslee, St. Sarance Hall	North Essex	"	27
18	Tecumseh (aft.)	North Essex	"	28
19	St. Louis, School (evg.)	North Essex	"	28
20	Leamington, Town Hall	South Essex	"	29

DIVISION 4.

J. G. Cornell, Scarboro', Jan. 5 to 7.
H. Glendinning, Manilla, Jan. 8 to 29.
W. C. Good, Brantford, Jan. 5 to 10; 21 to 25; 28 and 29.
A. W. Peart, Burlington, Jan. 14 and 15.
Miss B. D. Cleland, Newmarket, Jan. 5 to 20; 24; 26 and 27.

1	Waterdown, Township Hall	North Wentworth	Jan.	5
2	Freelton, McFarlane's Hall	North Wentworth	"	6
3	Rockton, Township Hall	North Wentworth	"	7
4	St. George, Library	North Brant	"	8
5	Onondaga, Township Hall	North Brant	"	10
6	Burford, Cornish Hall	South Brant	"	11
7	Mohawk, Methodist Church Basement	South Brant	"	12
8	Scotland, Foster's Hall	South Brant	"	13
9	Ancaster, Town Hall	South Wentworth	"	14
10	Stoney Creek, Institute Hall	South Wentworth	"	15
11	Campden, Hadden's Hall	Lincoln	"	17
12	Queenston, School House	Lincoln	"	18
13	Stevensville, Johnson's Hall	Welland	"	19
14	Willoughby, Town Hall	Welland	"	20
15	Silverdale, School House	Monck	"	21
16	Winger, Hall	Monck	"	22
17	Canboro, Town Hall	Monck	"	24
18	Caistorville, School House	Lincoln	"	25
19	York, Hall	Haldimand	"	26
20	Selkirk, Hall	Haldimand	"	27
21	Vittoria, Lecture Room	South Norfolk	"	28
22	Langton, Town Hall	South Norfolk	"	29

Division 5.

Gavin Barbour, Crosshill, Jan. 5 to 29.
A. E. Calnan, Allisonville, Jan. 7 to 12.
J. G. Cornell, Scarboro, Jan. 28 and 29.
Miss Bertha Duncan, Emery, Jan. 5 and 6; 13 to 17.

1	Eden Mills, Hall (evg.)	South Wellington	Jan.	5
2	Speedside, Hall (evg.)	South Wellington	"	6
3	Elmira, R. M. S. Hall	North Waterloo	"	7
4	Hawkesville, Fouvell's Hall	North Waterloo	"	8
5	Palmerston, Town Hall	West Wellington	"	10
6	Rothsay, Temperance Hall	West Wellington	"	11
7	Drayton, Town Hall	West Wellington	"	12
8	Grand Valley, Chatfield's Hall	East Wellington	"	13
9	Monticello, Hall (aft.)	East Wellington	"	14
10	Colbeck, St. Clemen's Church (evg.)	East Wellington	"	14
11	Damascus, Township Hall	East Wellington	"	15
12	Arthur, Town Hall	East Wellington	"	17
13	Chatsworth, Foresters' Hall (aft.)	North Grey	"	18
14	Desboro, Township Hall (evg.)	North Grey	"	18
15	Kilsyth, Township Hall	North Grey	"	19
16	Leith, Grange	North Grey	"	20
17	Shallow Lake	North Grey	"	21
18	Kemble, School (aft.)	North Grey	"	22
19	Brown's School House (evg.)	North Grey	"	22
20	Owen Sound, Council Chamber	North Grey	"	24
21	Bognor	North Grey	"	25
22	Strathnairn, School House	North Grey	"	26
23	Meaford, Town Hall	North Grey	"	27
24	Newton Robinson, Orange Hall	South Simcoe	"	28
25	Thornton, Temperance Hall	South Simcoe	"	29

Division 6.

H. Glendinning, Manilla, Dec. 1 to 3.
Mrs. Watts, Clinton, Dec. 1 to 3.

1	Ospringe, School House	Centre Wellington	Dec.	1
2	Marsville, Anthony's Hall	Centre Wellington	"	2
3	Bethany, Church Basement	Centre Wellington	"	3

Division 7.

G. Barbour, Crosshill, Nov. 29 to Dec. 17.
J. H. Esdon, Bainsville, Dec. 3 to 17.
Miss M. Yates, O.A.C., Guelph, Nov. 29 to Dec. 4.

1	Shelburne, Town Hall (aft.)	Dufferin	Nov.	29
2	Melancthon, Town Hall (evg.)	Dufferin	"	29
3	Orangeville, Town Hall	Dufferin	"	30
4	Mono Mills, Town Hall	Peel	Dec.	1
5	Huttonville, Town Hall	Peel	"	2
6	Weston, Dufferin Hall	West York	"	3
7	Woodbridge, Orange Hall	West York	"	4
8	Kettleby, Temperance Hall	North York	"	6
9	Queensville, Presbyterian Church	North York	"	7
10	Victoria Square, Public Hall	East York	"	8
11	Agincourt, Temperance Hall	East York	"	9
12	Cannington, Town Hall	North Ontario	"	10
13	Uxbridge, Market Hall	North Ontario	"	11
14	Pontypool, Orange Hall (aft.)	East Durham	"	13
15	Bethany, Town Hall (evg.)	East Durham	"	13
16	South Monaghan, S. S. Hall (aft.)	East Durham	"	14
17	Millbrook, Town Hall (evg.)	East Durham	"	14
18	Kendal, Foresters' Hall (aft.)	West Durham	"	15
19	Orono, Council Chamber (evg.)	West Durham	"	15
20	Bowmanville, Council Chamber	West Durham	"	16
21	Hampton, Town Hall	West Durham	"	17

Division 8.

W. C. Shearer, Bright, Dec. 1 to 17.
R. W. Grierson, Oshawa, Dec. 11 to 17.
D. A. MacKenzie, B.S.A., Lindsay, Dec. 1 to 4.
H. C. Duff, B.S.A., Norwood, Dec. 6 to 10.
Miss Susie Campbell, Brampton, Dec. 1 to 15.

1	Oakwood, Township Hall	West Victoria	Dec.	1
2	Lindsay, Town Hall	West Victoria	"	2
3	Fenelon Falls, Dickson's Hall	East Victoria	"	3
4	Bobcaygeon, Town Hall	East Victoria	"	4
5	Ennismore, Town Hall	West Peterboro	"	6
6	Lakefield, Town Hall	West Peterboro	"	7
7	Warsaw, Town Hall	East Peterboro	"	8
8	Douro, School House (aft.)	East Peterboro	"	9
9	South Dummer, School House (evg.)	East Peterboro	"	9
10	Keene, Town Hall	East Peterboro	"	10
11	Warkworth, Warkworth Hall	East Northumberland	Dec.	11, 13
12	Codrington, Orange Hall	East Northumberland	Dec.	14
13	Menie, Lamb's Hall	East Northumberland	"	15
14	Springbrook, Orange Hall	North Hastings	"	16
15	Marmora, Town Hall	North Hastings	"	17

Division 9.

C. W. Nash, 94 Lee Ave., Toronto, Nov. 27 to Dec. 15.
A. E. Calnan, Allisonville, Nov. 27 to Dec. 8; 14 and 15.
Miss G. Carter, Guelph, Dec. 9 to 14.

1	Westport, Methodist Church	South Leeds	Nov.	27
2	Seeley's Bay	South Leeds	"	29
3	Sydenham, Sydenham Hall	Frontenac	"	30
4	Wolfe Island, Marysville Hall	Frontenac	Dec.	1
5	Bath, Town Hall	Lennox	"	2
6	Napanee, Town Hall (aft.)	Lennox	"	3
7	Selby, Town Hall (evg.)	Lennox	"	3
8	Centreville, Town Hall	Addington	"	4
9	Newburgh, Finkle's Hall	Addington	"	6
10	Lonsdale, School House	East Hastings	"	7
11	Thomasburg, I.O.F. Hall	East Hastings	"	8
12	Wallbridge, Town Hall	West Hastings	"	9
13	Frankford, Sweetman's Hall	West Hastings	"	10
14	Gilbert's School House	West Hastings	"	11
15	Bayside, School House	West Hastings	"	13
16	Grafton, Township Hall	West Northumberland	"	14
17	Harwood, Boyles' Hall	West Northumberland	"	15

Division 10.

A. Groh, Preston, Ont., Nov. 29 to Dec. 18.
A. D. Harkness, Irena, Dec. 3 to 18.
Miss L. Shuttleworth, 7 Chicora Ave., Toronto, Dec. 9 to 11; 17 and 18.

1	Alice, Presbyterian Church	North Renfrew	Nov.	29
2	Micksburg, Public Hall	North Renfrew	"	30
3	Westmeath, Public Hall	North Renfrew	Dec.	1
4	Beachburg, Town Hall	North Renfrew	"	2
5	Grattan, School House	South Renfrew	"	3
6	Northcote, Temperance Hall	South Renfrew	"	4
7	Burnstown, Temperance Hall	South Renfrew	"	6
8	Glasgow Station, Davis Hall	South Renfrew	"	7
9	Middleville, Town Hall	North Lanark	"	8
10	Lanark, Town Hall	North Lanark	"	9
11	Perth, Town Hall	South Lanark	"	10
12	Maberly, Town Hall	South Lanark	"	11
13	Parham, I.O.O.F. Hall	Centre Frontenac	"	13
14	Mountain Grove, Town Hall	Centre Frontenac	"	14
15	Merrickville, Town Hall	North Leeds	"	15

16	Oxford Mills, Town Hall	North Leeds	Dec.	16
17	Spencerville, Town Hall	South Grenville	"	17
18	Algonquin, Temperance Hall	South Grenville	"	18

DIVISION 11.

W. F. Kydd, Simcoe, Ont., Dec. 1 to 17.
H. C. Emerson, Corbyville, Dec. 8 to 17.
Miss G. Carter, Guelph, Dec. 1 to 7; 15 to 17.

1	Berwick, Township Hall	Stormont	Dec.	1
2	Newington, Oddfellow's Hall	Stormont	"	2
3	Northfield, Adams' Hall	Stormont	"	3
4	Avonmore, Beaver Hall	Stormont	"	4
5	Moose Creek, Gagnor's Hall	Stormont	"	6
6	Monklands, McGillivray's Hall	Stormont	"	7
7	Martintown, St. Andrew's Hall	Glengarry	"	8
8	Maxville, Public Hall	Glengarry	"	9
9	Dalkeith, School House	Glengarry	"	10
10	Vankleek Hill, Town Hall	Prescott	"	11
11	Vars, Ganley's Hall	Russell	"	13
12	Kenmore	Russell	"	14
13	Manotick, Harmony Hall	Carleton	"	15
14	North Gower, Town Hall	Carleton	"	16
15	S. Mountain, Fenton's Hall	Dundas	"	17

DIVISION 12.

Edw. Jeffs, Bond Head, Ont., Dec. 1 to 18.

1	Gravenhurst, Town Hall	South Muskoka	Dec.	1
2	Bracebridge, Town Hall	South Muskoka	"	2
3	Germania, School House	South Muskoka	"	3
4	Purbrook, School House (aft.)	South Muskoka	"	4
5	Baysville, Town Hall (aft.)	South Muskoka	"	6
6	Macaulay Centre, Town Hall	South Muskoka	"	7
7	Bardsville, School House	South Muskoka	"	8
8	Ziska, Town Hall	South Muskoka	"	9
9	Brackenrig, School House	Port Carling	"	10
10	Port Carling, Town Hall	Port Carling	"	11
11	Orville (aft.)	Parry Sound West	"	13
12	Broadbent (evg.)	Parry Sound West	"	13
13	Hurdville (aft.)	Parry Sound West	"	14
14	No. 5 School House (evg.)	Parry Sound West	"	14
15	Parry Sound (aft.)	Parry Sound West	"	15
16	James Bay Jct. (evg.)	Parry Sound West	"	15
17	Carling (aft.)	Parry Sound West	"	16
18	No. 2 School House (eve.)	Parry Sound West	"	16
19	McKellar (aft. & evg.)	Parry Sound West	"	17
20	Dunchurch (aft.)	Parry Sound West	"	18

SUPPLEMENTARY MEETINGS.

DIVISION 1.

Anson Groh, Preston, Feb. 3 to 24.
B. J. Waters, Ivan, Feb. 14 to 24.
Miss. M. Yates, O.A.C., Guelph, Feb. 3 to 19.

1	Fordwich, Foresters' Hall	East Huron	Feb.	3
2	Bluevale, Foresters' Hall	East Huron	"	4
3	Jamestown, Victoria Hall	East Huron	"	5
4	Molesworth, Orange Hall	East Huron	"	7
5	Ethel, Township Hall	East Huron	"	8
6	Moncreiff, School House	East Huron	"	9
7	Walton, A.O.U.W. Hall	East Huron	"	10
8	Winthrop, Calden Hall	East Huron	"	11
9	Harlock, School House	East Huron	"	12

10	Londesborough, Bell's Hall	West Huron	Feb.	14
11	Holmesville, Wilson's Hall	West Huron	"	15
12	Benmiller, Glulehill's Hall	West Huron	"	16
13	Dungannon, Elliott's Hall	West Huron	"	17
14	St. Augustine, Church Hall	West Huron	"	18
15	St. Helen's, Mechanics' Inst. Hall	West Huron	"	19
16	Bervie, I.O.O.F. Hall	Centre Bruce	"	21
17	Chesley	Centre Bruce	"	22
18	Paisley, Town Hall	Centre Bruce	"	23
19	Gillies' Hill, Township Hall	Centre Bruce	"	24

Division 2.

W. F. Kydd, Simcoe, Jan. 5 to Feb. 8.
I. F. Metcalf, Collingwood, Jan. 19 to Feb. 8.
Miss S. Campbell, Brampton, Jan. 5 to Feb. 8.

1	Williamsford, Maccabee Hall	Centre Grey	Jan.	5
2	Walters' Falls, A.O.U.W. Hall	Centre Grey	"	6
3	Rocklyn, Ayr Hall	Centre Grey	"	7
4	Heathcote, Orange Hall	Centre Grey	"	8
5	Ravenna, Town Hall	Centre Grey	"	10
6	Kimberley, Union Hall	Centre Grey	"	11
7	Eugenia, Orange Hall	Centre Grey	"	12
8	Flesherton, Town Hall	Centre Grey	"	13
9	Hopeville, Allen's Hall	Centre Grey	"	14
10	Dundalk, Town Hall	Centre Grey	"	15
11	Badjeros, School House	Centre Grey	"	17
12	Maxwell, Orange Hall	Centre Grey	"	18
13	Singhampton, Hamilton's Hall	West Simcoe	"	19
14	Creemore, Leonard's Hall	West Simcoe	"	20
15	Everett, Orange Hall	West Simcoe	"	21
16	Duntroon, S.O.S. Hall	West Simcoe	"	22
17	Collingwood, Town Hall	West Simcoe	"	24
18	Stayner, Town Hall	West Simcoe	"	25
19	New Lowel, Town Hall	West Simcoe	"	26
20	Dalston, School House	Centre Simcoe	"	27
21	Midhurst, Town Hall	Centre Simcoe	"	28
22	Anten Mills, School House	Centre Simcoe	"	29
23	New Flos, School House	Centre Simcoe	"	31
24	Allenwood	Centre Simcoe	Feb.	1
25	Second Concession, School House	Centre Simcoe	"	2
26	Wyevale, Orange Hall	Centre Simcoe	"	3
27	Wyebridge, Orange Hall	Centre Simcoe	"	4
28	Lafontaine, Foresters' Hall	Centre Simcoe	"	5
29	Penetanguishene, Town Hall	Centre Simcoe	"	7
30	Ebenezer, School House	Centre Simcoe	"	8

Division 3.

Geo. Carlaw, Warkworth, Nov. 22 to Dec. 4.
R. R. Elliott, Owen Sound, Dec. 1 to 4.
Mrs. W. Woelard, Forest, Nov. 22 to 30.

1	Lion's Head, Town Hall	North Bruce	Nov.	22
2	Spry's School House	North Bruce	"	23
3	Mar, School House	North Bruce	"	24
4	Lucknow, Town Hall	South Bruce	"	25
5	Holyrood, Township Hall	South Bruce	"	26
6	Belmore, Foresters' Hall	South Bruce	"	27
7	Mildmay, Temperance Hall	South Bruce	"	29
8	Walkerton, Town Hall	South Bruce	"	30
9	Elmwood, Wildfang's Hall	South Grey and South Bruce	Dec.	1
10	Ayton, Doersam's Hall	South Grey	"	2
11	Holstein, Agricultural Hall	South Grey	"	3
12	Dromore, Russell Hall	South Grey	"	4

Division 4.

Geo. Carlaw, Warkworth, Feb. 3 to 24.
F. H. Silcox, Iona, Feb. 3 to 16.
Miss B. Gilholm, Bright, Feb. 10 and 18.

1	Oakdale, School House	West Lambton	Feb.	3
2	Rutherford, Township Hall	West Lambton	"	4
3	Beecher, Foresters' Hall	West Lambton	"	5
4	Wilkesport, Hamilton's Hall	West Lambton	"	7
5	Courtwright, Stewart's Hall	West Lambton	"	8
6	Sarnia, Town Hall (aft.)	West Lambton	"	9
7	Bunyan, School House (evg.)	West Lambton	"	9
8	Wyoming, Butler's Hall	East Lambton	"	10
9	Camlachie, Bridge's Hall	East Lambton	"	11
10	Forest, Town Hall	East Lambton	"	12
11	Warwick, Orange Hall	East Lambton	"	14
12	Arkona, Showler's Hall	East Lambton	"	15
13	Thedford, McKenzie's Hall	East Lambton	"	16
14	Parkhill, Town Hall	North Middlesex	"	17
15	Greenway, Wilson's Hall	North Middlesex	"	18
16	Allenford, Orange Hall	West Bruce	"	21
17	Burgoyne, Church Vestry (aft.)	West Bruce	"	22
18	McLennan's, McLennan's School (evg.)	West Bruce	"	22
19	Underwood, Town Hall	West Bruce	"	23
20	Tiverton, Town Hall	West Bruce	"	24

Division 5.

J. N. Paget, Canboro, Feb. 3 to 21.
R. W. Grierson, Oshawa, Feb. 22 to 26.
R. M. Young, Carlaw, Feb. 16 to 21.
Mrs. Colin Campbell, Windsor, Feb. 16 to 21.

1	Harriston, Town Hall	Union	Feb.	3
2	Clifford, Town Hall	Union	"	4
3	Drew, Temperance Hall	Union	"	5
4	Teviotdale, Foresters' Hall	Union	"	7
5	Listowel, Town Hall	North Perth	"	8
6	Atwood, Township Hall	North Perth	"	9
7	Monkton, Hall	North Perth	"	10
8	Millbank, Ritter's Hall	North Perth	"	11
9	Carthage, Foresters' Hall	North Perth	"	12
10	Rostock, Town Hall	North Perth	"	14
11	Stratford, Hall	North Perth	"	15
12	Tavistock, Opera House	South Perth	"	16
13	Sebringville, Foresters' Hall	South Perth	"	17
14	Staffa, Town Hall	South Perth	"	18
15	Fullarton, Township Hall	South Perth	"	19
16	Kirkton, Aberdeen Hall	South Perth	"	21
17	Elimville, Town Hall	South Huron	"	22
18	Grand Bend, Bremner Hall	South Huron	"	23
19	Hensall, McDonall's Hall	South Huron	"	24
20	Tuckersmith, Strory Hall	South Huron	"	25
21	Varna, Town Hall	South Huron	"	26

Division 6.

C. W. Nash, Toronto, Feb. 2 to 23.
J. G. Alexander, V.S., Mono Road, Feb. 12 to 23.
Mrs. M. L. Ashley, Londesboro', Feb. 2 to 11.

1	Princeton, Town Hall	North Oxford	Feb.	2
2	Drumbo, Town Hall	North Oxford	"	3
3	Innerkip, Foresters' Hall	North Oxford	"	4
4	Cassell, Cheese Factory	North Oxford	"	5
5	Hickson, Foresters' Hall	North Oxford	"	7
6	Braemar, Gospel Hall	North Oxford	"	8
7	Embro, Town Hall	North Oxford	"	9
8	Harrington, Hill's Hall	North Oxford	"	10

9	Thamesford, Foresters' Hall	North Oxford	Feb.	11
10	Wellburn, German's Hall	East Middlesex	"	12
11	Ilderton, Oddfellows' Hall	East Middlesex	"	14
12	Hyde Park, Foresters' Hall	East Middlesex	"	15
13	Witon Grove, Sunday School	East Middlesex	"	16
14	Glanworth, Foresters' Hall	East Middlesex	"	17
15	Nilestone, Masonic Hall	East Middlesex	"	18
16	Mt. Brydges, Town Hall	West Middlesex	"	19
17	Appin, Town Hall	West Middlesex	"	21
18	Glencoe, Town Hall	West Middlesex	"	22
19	Wardsville, Town Hall	West Middlesex	"	23

Division 7.

H. Glendinning, Manilla, Feb. 2 to 26.
G. H. Carpenter, B.S.A., Fruitland, Feb. 2 to 5.
A. E. Sherrington, Walkerton, Feb. 18 to 26.
Mrs. W. Woelard, Forest, Feb. 7 to 17.

1	Straffordville, Town Hall	East Elgin	Feb.	2
2	Mount Salem, Royal Templars	East Elgin	"	3
3	Union, School House	East Elgin	"	4
4	Mapleton, School House	East Elgin	"	5
5	Middlemarch, Grange Hall	West Elgin	"	7
6	Dutton, Town Hall	West Elgin	"	8
7	Rodney, Whitton's Hall	West Elgin	"	9
8	Highgate, Township Hall	East Kent	"	10
9	Morpeth, A.O.U.W. Hall	East Kent	"	11
10	Guilds, School House	East Kent	"	12
11	Thamesville, Town Hall	East Kent	"	14
12	Kent Bridge, Langford Hall	East Kent	"	15
13	Wabash, Foresters' Hall	East Kent	"	16
14	Dresden, Town Hall	East Kent	"	17
15	Bear Line, Foresters' Hall	West Kent	"	18
16	Irwin, Union Hall	West Kent	"	19
17	Fletcher, Foresters' Hall	West Kent	"	21
18	Valetta, Township Hall	West Kent	"	22
19	Merlin, Ayr Hall	West Kent	"	23
20	Cedar Springs, Township Hall	West Kent	"	24
21	Wheatley, Gibson's Hall (2 day)	South Essex	Feb.	25, 26

Division 7*a*.

H. Grose, Lefroy, Feb. 7 to 18.
J. O. Duke, Ruthven, Feb. 7 to 18.
Mrs. F. W. Watts, Clinton, Feb. 7 to 15.

1	Kingsville, Town Hall	South Essex	Feb.	7
2	Harrow, Town Hall	South Essex	"	8
3	Amherstburg, Town Hall	South Essex	"	9
4	Essex, Town Hall	South Essex	"	10
5	Comber, Town Hall	North Essex	"	11
6	Ruscom, Town Hall	North Essex	"	12
7	Maidstone, Town Hall	North Essex	"	14
8	Oldcastle, Town Hall	North Essex	"	15
9	Canard River (aft.)	North Essex	"	16
10	Sunnyside, Hall (evg.)	North Essex	"	16
11	Elmstead, Town Hall	North Essex	"	17
12	St. Joachim, Hall (aft.)	North Essex	"	18
13	Bell River, Town Hall (evg.)	North Essex	"	18

Division 8.

R. S. Stevenson, Ancaster, Feb. 3 to 9.
W. F. Kydd, Simcoe, Feb. 10 to March 4.
P. Angle, B.S.A., Simcoe, Feb. 15 to 24.
Miss L. Shuttleworth, Toronto, Feb. 3 to 14.
Mrs. M. L. Ashley, Londesboro', Feb. 25 to March 4.

1	Falkland, Hulbert Hall	South Brant	Feb.	3
2	Cathcart, Foresters' Hall	South Brant	"	4

3	Hatchley, Baptist Church Basement	South Brant	Feb.	5
4	Ohsweken, Council House	South Brant	"	7
5	Burtch, School House	South Brant	"	8
6	Canfield, MacDonald Hall	Haldimand	"	9
7	South Cayuga, Town Hall	Haldimand	"	10
8	Kohler, Hall	Haldimand	"	11
9	Gill, Gill's School House	Haldimand	"	12
10	Jarvis, Hall	Haldimand	"	14
11	Port Dover, Town Hall	South Norfolk	"	15
12	Walsh, Town Hall	South Norfolk	"	16
13	St. Williams, Town Hall	South Norfolk	"	17
14	Fairgrounds, Town Hall	South Norfolk	"	18
15	Guysboro, Orange Hall	North Norfolk	"	19
16	Simcoe, Council Chamber	North Norfolk	"	21
17	Tyrrell, Tyrrell Hall	North Norfolk	"	22
18	Windham Centre, Town Hall	North Norfolk	"	23
19	Kelvin, Kelvin Hall	North Norfolk	"	24
20	Tillsonburg, Council Chamber	South Oxford	"	25
21	Brownsville, Town Hall	South Oxford	"	26
22	Springford, Town Hall	South Oxford	"	28
23	Burgessville, Oddfellows' Hall	South Oxford	Mar.	1
24	Currie, A.O.U.T. Hall	South Oxford	"	2
25	Beachville, Town Hall	South Oxford	"	3
26	Folden's, Folden's Hall	South Oxford	"	4

Division 9.

J. W. Clark, Cainsville, Feb. 1 to March 5.
Geo. Robertson, St. Catharines, Feb. 9 to 14.
S. H. Rittenhouse, Jordan Harbor, Feb. 23 to March 5
Miss G. Carter, Guelph, Feb. 1 to 9; 15 to 22.
Miss L. Shuttleworth, Toronto, March 1 to 4.

1	Jerseyville, Lee's Hall	South Wentworth	Feb.	1
2	Carluke, School House	South Wentworth	"	2
3	Glanford, Town Hall	South Wentworth	"	3
4	Hannon, School	South Wentworth	"	4
5	Binbrook, Temperance Hall	South Wentworth	"	5
6	Tapleytown, Old Church	South Wentworth	"	7
7	Winona, Institute Hall	South Wentworth	"	8
8	Grimsby, Society Hall	Lincoln	"	9
9	Beamsville, Town Hall	Lincoln	"	10
10	Jordan, Frank's Hall	Lincoln	"	11
11	Grantham, Orange Hall	Lincoln	"	12
12	Virgil, Public Hall	Lincoln	"	14
13	Niagara Falls South, Town Hall	Welland	"	15
14	Allanburg, Township Hall	Welland	"	16
15	Crowland, Township Hall	Welland	"	17
16	Ridgeway, Town Hall	Welland	"	18
17	Humberstone, Township Hall	Welland	"	19
18	Brookfield, School House	Welland	"	21
19	Air Line, School House	Welland	"	22
20	Marshville, Town Hall	Monck	"	23
21	Attercliffe, Sta., Cheese Factory	Monck	"	24
22	Wellandport, Misener's Hall	Monck	"	25
23	Smithville, Brant's Hall	Monck	"	26
24	Pelham Centre, Town Hall	Monck	"	28
25	Millgrove, Township Hall	North Wentworth	Mar.	1
26	Carlisle, Orange Hall	North Wentworth	"	2
27	Westover, Maccabees' Hall	North Wentworth	"	3
28	Kirkwall, School House	North Wentworth	"	4
29	Sheffield, Township Hall	North Wentworth	"	5

Division 10.

L. E. Annis, Toronto, Feb. 2 to 28.
H. Grose, Lefroy, Feb. 24 to 28.
Miss G. Carter, Guelph, Feb. 3, 4, 7, 8.
Miss S. Campbell, Brampton, Feb. 10 to 23.

1	Breslau, School House	South Waterloo	Feb.	2
2	Preston, Opera House	South Waterloo	"	3

3	Hespeler, Gray's Hall	South Waterloo	Feb.	4
4	Galt, Town Hall	South Waterloo	"	5
5	Branchton, Foresters' Hall	South Waterloo	"	7
6	Ayr, McGeorge's Hall	South Waterloo	"	8
7	Roseville, School House	South Waterloo	"	9
8	New Dundee, Chipman's Hall	South Waterloo	"	10
9	Mannheim, School Room	South Waterloo	"	11
10	Haysville, Village Hall	South Waterloo	"	12
11	New Hamburg, Fell Hall	South Waterloo	"	14
12	Winterbourne, St. Andrew's Hall	North Waterloo	"	15
13	Conestogo, Township Hall	North Waterloo	"	16
14	Floradale, Steddicks' Hall	North Waterloo	"	17
15	Linwood, Spahr's Hall	North Waterloo	"	18
16	St. Clement's, Schneider's Hall	North Waterloo	"	19
17	St. Jacob's, Wideman's Hall	North Waterloo	"	21
18	Waterloo, Town Hall	North Waterloo	"	22
19	Centreville, Township Hall	North Waterloo	"	23
20	Glenmorris, Hall	North Brant	"	24
21	Moyle's School House (aft.)	North Brant	"	25
22	White's School House (evg.)	North Brant	"	25
23	Cainsville, Orange Hall	North Brant	"	26
24	Langford, School House (aft.)	North Brant	"	28
25	Tuscarora, P.O. Middleport (evg.)	North Brant	"	28

Division 11.

L. E. Annis, 206 Broadview Ave., Toronto, Jan. 5 to 31.
J. G. Alexander, V.S., Mono Road, Jan. 14 to 17.
Mrs. F. W. Watts, Londesboro', Jan. 5 to 13.
Miss L. Shuttleworth, Toronto, Jan. 19 to 31.

1	Mt. Forest, Allan's Hall	East Wellington	Jan.	5
2	Kenilworth, Township Hall	East Wellington	"	6
3	Conn, Orange Hall (aft.)	East Wellington	"	7
4	Conn, School House (evg.)	East Wellington	"	7
5	Cedarville, Orange Hall	East Wellington	"	8
6	Erin, Town Hall	Centre Wellington	"	10
7	Orton, Town Hall	Centre Wellington	"	11
8	Belwood, Town Hall	Centre Wellington	"	12
9	Cumnock, School House	Centre Wellington	"	13
10	Alma, Hall	West Wellington	"	14
11	Glenallen, Coutt's Hall	West Wellington	"	15
12	Moorefield, Township Hall	West Wellington	"	17
13	Loretto, Barries' Hall	South Simcoe	"	19
14	Bondhead, Orange Hall	South Simcoe	"	20
15	Churchill, Orange Hall	South Simcoe	"	21
16	Stroud, Temperance Hall	South Simcoe	"	22
17	Ivy, Orange Hall	South Simcoe	"	24
18	Edgar, Temperance Hall (aft.)	East Simcoe	"	25
19	Shanty Bay, Temperance Hall (evg.)	East Simcoe	"	25
20	Oro Station, Temperance Hall (aft.)	East Simcoe	"	26
21	Humberstone, Temperance Hall (evg.)	East Simcoe	"	26
22	Orillia, Council Chamber	East Simcoe	"	27
23	Uhthoff, Waring's Hall (aft.)	East Simcoe	"	28
24	Ardtrea, School House (evg.)	East Simcoe	"	28
25	Warminster, McKinley's Hall	East Simcoe	"	29
26	Rugby, Temperance Hall	East Simcoe	"	31

Division 12.

W. C. Shearer, Bright, Jan. 4 to Feb. 15.
R. M. Young, Carlaw, Jan. 4 to 14.
G. H. Carpenter, Fruitland, Jan. 31 to Feb. 15.
Mrs. Woelard, Forest, Jan. 15 to 29.

1	Jessopville, Church Hall (aft.)	Dufferin	Jan.	4
2	Keldon, Church Hall (evg.)	Dufferin	"	4
3	Riverview, School House (aft.)	Dufferin	"	5
4	Corbetton, Church Hall (evg.)	Dufferin	"	5

5	Honeywood, O. F. Hall	Dufferin	Jan.	6
6	Horning's Mills, Workman's Hall	Dufferin	"	7
7	Perm, Orange Hall	Dufferin	"	8
8	Violet Hill, Orange Hall (aft.)	Dufferin	"	10
9	Whitfield, Orange Hall	Dufferin	"	11
10	Relessy, Orange Hall (aft.)	Dufferin	"	12
11	Mono Centre, Council Chamber (evg.)	Dufferin	"	12
12		Dufferin	"	13
13	Laurel, Township Hall	Dufferin	"	14
14	Alton, Science Hall	Peel	"	15
15	Belfountain, Town Hall	Peel	"	17
16	Caledon, Town Hall	Peel	"	18
17	Mono Road, Town Hall	Peel	"	19
18	Bolton, Town Hall	Peel	"	20
19	Castlemore, Town Hall	Peel	"	21
20	Snelgrove, Town Hall	Peel	"	22
21	Streetsville, Foresters' Hall	Peel	"	24
22	Islington, Township Hall	West York	"	25
23	Thistletown, Hotel	West York	"	26
24	Elia, Foresters' Hall	West York	"	27
25	Maple, Masonic Hall	West York	"	28
26	Kleinburg, Temperance Hall	West York	"	29
27	Nobleton, Music Hall	North York	"	31
28	Schomberg	North York	Feb.	1
29	King City, Crossley's Hall	North York	"	2
30	Vandorf, Mechanic Hall	North York	"	3
31	Aurora	North York	"	4
32	Newmarket, Temperance Hall	North York	"	5
33	Belhaven, Town Hall	North York	"	7
34	Mt. Albert, Town Hall	North York	"	8
35	Ballantrae, Village Hall	North York	"	9
36	Stouffville, Council Chamber	East York	"	10
37	Box Grove, Foresters' Hall	East York	"	11
38	Victoria Square, Public Hall	East York	"	12
39	Thornhill, Victoria Hall	East York	"	14
40	Wexford, Methodist Church	East York	"	15

Division 13.

Hy. Grose, Lefroy, Jan. 5 to 29.
J. H. Hare, B.S.A., Whitby, Jan. 5 to 11.
D. A. McKenzie, B.S.A., Lindsay, Jan. 12 to 20; 22.
J. P. Bridgman, Winona, Jan. 24 to 29.
Mrs. Ashley, Londesboro, Jan. 12 to 25.

1	Altona, School House	North Ontario	Jan.	5
2	Goodwood, Town Hall	North Ontario	"	6
3	Sandford, Oddfellows' Hall	North Ontario	"	7
4	Zephyr, Public Hall	North Ontario	"	8
5	Brechin, McGrath's Hall (aft.)	North Ontario	"	10
6	Udney, Orange Hall (evg.)	North Ontario	"	10
7	Gamebridge, Orange Hall	North Ontario	"	11
8	Woodville, Village Hall	West Victoria	"	12
9	Little Britain, Temperance Hall	West Victoria	"	13
10	Valentia, Foresters' Hall	West Victoria	"	14
11	Cambray, Orange Hall	East Victoria	"	15
12	Dunsford, Old Church	East Victoria	"	17
13	Burnt River, Orange Hall	East Victoria	"	18
14	Omemee, Opera House	East Victoria	"	19
15	Bethany, Town Hall (aft.)	East Durham	"	20
16	Manvers' Sta., Orange Hall (evg.)	East Durham	"	20
17	Elizabethville, Ch. Basement (aft.)	East Durham	"	21
18	Gardenhill, Orange Hall (evg.)	East Durham	"	21
19	Milbrook, Town Hall	East Durham	"	22
20	Canton, S. O. E. Hall	East Durham	"	24
21	Zion, Sunday School Hall	East Durham	"	25
22	Newtonville, S. O. T. Hall (aft.)	West Durham	"	26
23	Newcastle, Town Hall (evg.)	West Durham	"	26

24	Orono, Town Hall (aft.)	West Durham	Jan.	27
25	Solina, Temperance Hall	West Durham	"	28
26	Nestleton, Foresters' Hall	West Durham	"	29

Division 14.

J. Gardhouse, Highfield, Jan. 7 to 13.
H. Jones, Maitland, Jan. 14 to 21.
A. E. Sherrington, Walkerton, Jan. 22 to 31.
H. C. Duff, B.S.A., Norwood, Jan. 7 to 13.
A. P. MacVennel, B.S.A., Picton, Jan. 14 to 21.
D Bonis, Rannoch, Jan. 22 to 31.
Miss. G. Carter, Guelph, Jan. 22 to 26.

1	Stewarts, Union Hall	West Peterboro'	Jan.	7
2	4th Line Smith, Orange Hall	West Peterboro'	"	8
3	Peterboro', Ch. Basement (aft.)	West Peterboro'	"	10
4	North Monaghan, Town Hall (evg.)	West Peterboro'	"	10
5	Havelock, Town Hall	East Peterboro'	"	11
6	Norwood, Town Hall	East Peterboro'	"	12
7	Westwood, Township Hall	East Peterboro'	"	13
8	Rednersville, Redner's Hall (a.m. & p.m.)	Prince Edward	"	14
9	Demorestville, Town Hall (a.m. & p.m.)	Prince Edward	"	15
10	Bloomfield, Town Hall (a.m. & p.m.)	Prince Edward	"	17
11	Milford, Town Hall (a.m. & p.m.)	Prince Edward	"	18
12	Cherry Valley (a.m. & p.m.)	Prince Edward	"	19
13	Westlake, School House (a.m. & p.m.)	Prince Edward	"	20
14	Wellington, Town Hall (a.m. & p.m.)	Prince Edward	"	21
15	Wooler, Town Hall	East Northumberland	"	22
16	Brighton, Town Hall	East Northumberland	"	24
17	Dundonald, Eden Hall	East Northumberland	"	25
18	Castleton, Town Hall	East Northumberland	"	26
19	Roseneath, Township Hall	West Northumberland	"	27
20	Centreton, Orange Hall	West Northumberland	"	28
21	Baltimore, Chapman's Hall	West Northumberland	"	29
22	Coldsprings, Township Hall	West Northumberland	"	31

Division 15.

Geo. Carlaw, Warkworth, Jan. 5 to 31.
H. C. Emerson, Corbyville, Jan. 5 to 20.
A. E. Calnan, Allisonville, Feb. 1 to 7.
W. J. Kerr, Ottawa, Jan. 21 to Feb. 7.
Miss G. Gray, Toronto, Jan. 21 to Feb. 7.

1	Newboro' Town Hall	South Leeds	Jan.	5
2	Delta, Town Hall	South Leeds	"	6
3	Gananoque, Town Hall	South Leeds	"	7
4	Lansdowne, Town Hall	South Leeds	"	8
5	Joyceville, Hall	Frontenac	"	10
6	Sunbury, Hall	Frontenac	"	11
7	Westbrooke, Hall	Frontenac	"	12
8	Hartington, Hall	Frontenac	"	13
9	Wilton, Orange Hall	Lennox	"	14
10	Odessa, Town Hall	Lennox	"	15
11	Sillsville, Town Hall	Lennox	"	17
12	Adolphustown, Town Hall	Lennox	"	18
13	Enterprise, Merrill's Hall	Addington	"	19
14	Tamworth, Town Hall	Addington	"	20
15	Tweed, Town Hall	East Hastings	"	21
16	Queensboro', Orange Hall	North Hastings	"	22
17	Eldorado, Town Hall	North Hastings	"	24
18	Madoc, Town Hall	North Hastings	"	25
19	Ivanhoe, Orange Hall	North Hastings	"	26
20	Moira, Town Hall	North Hastings	"	27
21	Roslin, Chosen Friends' Hall	East Hastings	"	28
22	Plainfield, Orange Hall	East Hastings	"	29
23	Foxboro', School House	East Hastings	"	31
24	Bethel, Foresters' Hall	East Hastings	Feb.	1

25	Clazies', School House	East Hastings	Feb.	2
26	Melrose, Town Hall	East Hastings	"	3
27	Johnstown, School House	West Hastings	"	4
28	River Valley, School House	West Hastings	"	5
29	Turners', School House	West Hastings	"	7

Division 16.

J. N. Paget, Canboro, Jan. 7 to Feb. 1.
A. D. Harkness, Irena, Jan. 7 to Feb. 1.
A. M. Campbell, Maxville, Jan. 12 to 15.
Miss G. Gray, Toronto, Jan. 7 to 15.

1	Maynard, Church Basement	South Grenville	Jan.	7
2	Garretton	South Grenville	"	8
3	Shanley, Workmen's Hall	South Grenville	"	10
4	Brouseville, School House	South Grenville	"	11
5	Brinston, Gibson's Hall	Dundas	"	12
6	Williamsburg, Boyce's Hall	Dundas	"	13
7	Winchester Springs, Orange Hall	Dundas	"	14
8	Morewood	Dundas	"	15
9	Aultsville, Fraternity Hall	Stormont & Cornwall	"	17
10	Wakes, Connoly's Hall	Stormont & Cornwall	"	18
11	Cornwall Centre, Township Hall	Stormont & Cornwall	"	21
12	South Branch, Patrons' Hall	Stormont & Cornwall	"	22
13	N. Lancaster, McDonald's Hall	Glengarry	"	24
14	Lochiel, Township Hall	Glengarry	"	25
15	Dunvegan, McLeod's Hall	Glengarry	"	26
16	Hawkesbury, Town Hall	Prescott	"	27
17	Plantagenet, Town Hall	Prescott	"	28
18	Clarence Creek, Town Hall	Russell	"	29
19	Hawthorne, Orange Hall	Russell	"	31
20	Casselman, Town Hall	Russell	Feb.	1

Division 17.

Ed. Jeffs, Bond Head, Jan. 5 to 31.
J. W. Kerr, Ottawa, Jan. 5 to 13.
J. H. Esdon, Bainsville, Jan. 14 to 31.

1	Elphin, Public Hall	N. Lanark	Jan.	5
2	McDonald's Corners, Agricultural Hall	N. Lanark	"	6
3	Poland, Private Hall	N. Lanark	"	7
4	Watson's Corners, Temperance Hall	N. Lanark	"	8
5	Balderson, School House	S. Lanark	"	10
6	Drummond, Orange Hall	S. Lanark	"	11
7	Richardson's, School	S. Lanark	"	12
8	McLean's, School House	S. Lanark	"	13
9	Galetta, Public Hall	Carleton	"	14
10	Woodlawn, Town Hall	Carleton	"	15
11	Carp, Town Hall	Carleton	"	17
12	South March, Town Hall	Carleton	"	18
13	Stittsville, Barton's Hall	Carleton	"	22
14	Toledo, Town Hall	N. Leeds & Grenville	"	24
15	Easton's Corners, Town Hall	N. Leeds & Grenville	"	25
16	Bishop's Mills, Private Hall	N. Leeds & Grenville	"	26
17	Heckston, Orange Hall	N. Leeds & Grenville	"	27
18	Burritt's Rapids, Victoria Hall	N. Leeds & Grenville	"	28
19	Sharbot Lake, Hetherington's Hall	C. Frontenac	"	29
20	Piccadilly, Town Hall	C. Frontenac	"	31

SPEAKERS AND SUBJECTS.

ALEXANDER, J. G., V.S., Mono Road.—Dr. Alexander's experience as a practising veterinarian in one of the progressive farming districts of the Province places him in a position to give valuable instruction upon the subjects announced herewith.

Subjects:—

"Breeding of Heavy Horses."
"Common Ailments and Emergency Treatment."
"The Brood Mare and Her Foal."
"Breeding and Care of Farm Animals."
"Diseases of Farm Animals and their Treatment."
"Examining Horses for Soundness."

ANNIS, L. E., 206 Broadview Avenue, Toronto. Mr. Annis, ex-president of the Milk Producers' Association, is a practical stock breeder and dairyman. He has made a special study of dairy methods and stock breeding in the Old Country. Mr. Annis has had nine years' experience in addressing Farmers' Institute meetings. He has always taken a deep interest in seed improvement and the eradication of weeds. It was during his term as president that the E. York Farmers' Institute established a seed fair, through which much has been done to stimulate the production of better crops. Mr. Annis is prepared to give judging demonstrations in draught horses, beef cattle and dairy cows.

Subjects:—

"Soil Cultivation and Rotation of Crops."
"Breeding of Draught Horses and Beef Cattle."
"Field Roots and Corn."
"Clovers: Alfalfa and Red Clover Midge."
"Destruction of Weeds."
"The Dairy Industry."
"Seed Selection."

BAILEY, C. F., B.S.A., Department of Agriculture, Toronto.—Mr. Bailey has been engaged to assist in Farmers' Institute Club and short course work, as well as the general work of the Institute branch. Mr. Bailey is a graduate of the O.A.C. He has successfully managed a farm in the Annapolis Valley, N.S., where apple growing was followed in conjunction with general farming. Mr. Bailey went largely into the breeding of Hackney horses, Ayrshire cattle and Leicester sheep. He has made a special study of live stock, and is a good judge of the same. He will be prepared to conduct judging classes in beef and dairy cattle, heavy and light horses, sheep and swine.

Subjects:—

"Breeding, Feeding and Care of Dairy Cattle."
"Beef Cattle for the Market."
"The Heavy Horse."
"Soil Fertility and Conservation of Moisture."
"Bacteria on the Farm."

BALDWIN, L. H., Forest Road, Toronto.—Mr. Baldwin is the proprietor of a poultry farm on the colony plan. He is a capable business man, and has made the

work a pronounced success, introducing many original ideas in connection with brooders, incubators, housing and feeding of his birds. Mr. Baldwin is well qualified to speak on any phase of the industry.

Subjects:—

"Breeding, Feeding, and General Care of Fowl."
"Incubation and Incubators."
"Winter Egg Production."
"Poultry Buildings and Appliances."
"Preparation of Fowl for the Market."

BARBOUR, GAVIN, Crosshill.—Mr. Barbour is a representative of a large number of farmers who have succeeded, by hard labour and a thorough knowledge of the lines of farming followed, in increasing the productivity of the farm and making many improvements, while at the same time paying off obligations.

Mr. Barbour has, for the past five years, been well received by the Institutes. He is particularly well qualified to give practical demonstrations in the judging of beef cattle, having given some little attention to this work for the benefit of his neighbours. The young farmers especially should benefit from Mr. Barbour's addresses.

Subjects:—

"Beef Cattle."
"Draught Horses and How to Raise Them."
"Corn and the Silo."
"Farmers and their Sons."

BECKETT, H. L., Hamilton.—Mr. Beckett is a prosperous young farmer in the vicinity of Hamilton. He spent his early years on the farm, and subsequently took a full course at the Ontario Agricultural College, graduating in 1893. Mr. Beckett has successfully managed the homestead, devoting a good deal of attention to the dairy industry. He had charge of one of the travelling dairies which toured the Province some years ago, and gave general satisfaction in conducting this educational campaign. He has already had extended experience in Institute work, and is quite at home in it. Mr. Beckett will be available for occasional meetings this winter.

Subjects:—

"Farmyard Manure; its Management and Application."
"Improving our Dairy Herds."
"Feeding for Milk."
Evening: "Farming as an Occupation."

BEST, J. A., Whitfield.—Mr. Best is one of the farmers who have recognized in the Farmers' Institute a stepping-stone to greater success in agricultural work, not only for himself, but for his fellow-farmer. He began by speaking at local meetings in his own county. Mr. Best's subjects are of vital interest to a large majority of the farmers of this Province.

Subjects:—

"How to Increase and Maintain Soil Fertility."
"Care and Management of Beef Cattle."
"Selection of Seed Grain."
Evening: "Farming as an Occupation."

Bonis, David, Rannoch.—Mr. Bonis has not only successfully operated from two to five hundred acres of land during his twenty-five years' experience in agriculture, but taken an active part in municipal improvements, particularly good roads. His remarks upon corn and ensilage are of particular value to Ontario farmers.

Subjects:—
"Building Good Roads."
"Working Out a County Good Roads System."
"Corn for Ensilage."
"Alfalfa."
"Fattening Cattle: Grazing vs. Stabling."

Bridgman, J. P., Winona.—Mr. Bridgman is one of the successful fruitmen of the Niagara district, and has always taken an interest in local meetings re the fruit industry. Mr. Bridgman is an all-round farmer, but specializes in fruit growing. His wide experience enables him to make practical application of his knowledge of soil fertility and conservation of soil moisture in all localities he may visit.

Subjects:—
"Soil Fertility and Conservation of Soil Moisture."
"Care of the Orchard."
"Spraying and Its Results."
"Small Fruits."
"The Farm Garden."
Evening: "Good Citizenship."

Bunting, W. H., St. Catharines.—Mr. Bunting, past president of the Ontario Fruit Growers' Association, and now president of the Niagara District Fruit Growers' Association, is one of the largest fruit growers in the Niagara peninsula. His farm is devoted largely to apples, peaches and truck crops. Mr. Bunting also does an extensive market garden business. He is a recognized authority on all matters pertaining to Ontario fruit growing and marketing.

Subjects:—
"The Care of the Orchard."
"Spraying."
"Small Fruits."
"Filler Crops."

Calnan, A. E., Allisonville.—Mr. Calnan is a dairyman and a specialist in the production of high-class seed corn. For years he has been prominently connected with one of the leading factories in Prince Edward County, which has become so famous for its high quality of cheese. He is well qualified to talk on general farming, and is appreciated by many who earnestly wish to make the best of grain and dairy products.

Subjects:—
"The Building-up and Maintenance of the Dairy Herd."
"The Raising of Fodder for Dairy Cattle."
"Co-operative Cheese-making, from the Producers' and Manufacturers' Standpoints."

"Improvement of Crops by Seed Selection."
Evening: "The Dairy Industry."
"Our Canadian Heritage."

CAMPBELL, A. M., Maxville.—Mr. Campbell is a successful dairyman and general farmer. His practical grasp of the subjects announced, and the clear and forceful manner in which he imparts information, render him a valuable man in Institute work.

Subjects:—
"The Breeding of Dairy Cattle."
"Care and Feeding of the Dairy Cow."
"Cultivation of Corn and the Silo."
"The Bright Side of Farm Life."
"Farm Management."

CAMPBELL, JNO., Woodville.—It is not necessary to more than mention that the John Campbell referred to is the well-known sheep breeder who has been so successful, not only at exhibitions in Canada, but also at the leading shows on the other side of the line. Mr. Campbell's specialty is sheep raising, and he is also considered one of the best authorities on general farming and the production of beef.

Mr. Campbell was awarded a gold medal for the best farm in nine counties some years ago. He has acted as judge in the field crop competitions which are being held from year to year under the direction of the agricultural societies.

Subjects:—
"Growing Lambs for Profit."
"The Butcher's Bullock, from Breeding to Block."
"The Bacon Trade."
"Importance of Using Good Selections of Seed Grain."
"How to Double the Production and Income of the Average Farm."
"Tile Draining."
Evening: "Ontario—Our Duty in Maintaining its Reputation."
"Farming as a Business."
"The Secret of Success."

CARLAW, GEO., Warkworth.—Mr. Carlaw is a good, practical farmer in Northumberland County. He attended the Ontario Agricultural College in his earlier years, and since then has been putting into practice on his farm the knowledge acquired in that institution. He is a practical dairyman, having served his time in the home dairy and in the factory. Mr. Carlaw is also familiar with the practical work of the Farmers' Institute, having been secretary of his own local Institute for many years. Mr. Carlaw has had several years' experience in Ontario Institutes, both as lecturer and officer, and has also been engaged at Institute work in Quebec.

Subjects:—
"Feeding, Care and Management of Dairy Herd."
"Eradication of Weeds."
"Corn-growing for the Silo."
"Cultivation of the Soil."
Evening: "Agricultural Education."

CARPENTER, G. H., B.S.A., Fruitland.—For a year and a half Mr. Carpenter edited *The Canadian Dairyman*. He has spent many years on a 300-acre fruit and dairy farm. He is prepared to combine the scientific and the practical in a way which is highly appreciated by the agriculturist.

Subjects:—

"The Improvement of Dairy Stock; their Breeding and Care."
"Feeding Dairy Cattle."
"The Cultivation of Orchards—Apples, Peaches, Plums, etc."
"Improving Farm Life."
"Economical Farming, or How to Get the Most Out of the Farm."

CLARK, J. W., Cainsville.—Mr. Clark is one of the largest poultry breeders in Ontario, and has won many prizes on dressed poultry at the Winter Fair, Guelph, including the sweepstakes. He is a strong advocate of utility breeds for the farmer. For two years Mr. Clark was poultry instructor in an American State College. He is also a breeder of pure-bred hogs of the bacon type, has had several years' experience in growing alfalfa, and has also a large apiary. Mr. Clark has given considerable attention to the production of good seed and methods of identification and eradication of weeds. After four years' work on an apple orchard, he increased the yield from 100 barrels of inferior fruit to 400 barrels of a choice product. In 1909, his apiary netted a two-ton yield. Mr. Clark will explain his methods to the Institutes.

Subjects:—

"Growing Alfalfa."
"Commercial Apple Growing—How to Make It Pay."
"Growing Small Fruits—Strawberries, Raspberries, Currants, etc."
"Importance of Seed Selection."
"Commercial Fertilizers—Do They Pay?"

Evening: "Poultry: Selecting; Feeding; Hatching, Natural and Artificial; Rearing; Fattening; Housing."
"Care of an Apiary."

CONNELL, R. J., Roebuck.—Mr. Connell is the son of a prosperous farmer in S. Grenville. He has proven himself not only a progressive farmer, but a successful feeder and breeder of dairy stock. He is a leading prize-winner in the Grenville County exhibitions, and has been well received in his first Institute series by the people of his own county.

Subjects:—

"Selection and Improvement of the Dairy Herd."
"Feeding Dairy Cattle."
"Soil Cultivation."

Evening: "Working with a Definite Object in View."

CORNELL, J. G., Scarboro.—Mr. Cornell has had the advantage of instruction at the Agricultural College, Guelph, as well as a number of years' practical experience in successfully managing his own farm, which has been devoted largely to the production of milk."

Subjects:—

"Production of Milk for City Trade."
"The Production and Feeding of Silage."
"Cultivation and Rotation."
"Improvement in Rural Conditions."
"Co-operation for the Farmer."

DAVIDSON, Dr. J. H., Cobourg.—Dr. Davidson is a well-known veterinarian of Durham County. He is a capable judge of horses and cattle, and is prepared to render valuable advice as to the proper care and treatment of animals on the farm.

Subjects:—

"Care and Management of the Brood Mare and Foal."
"Diseases of Farm Animals."
"Selection and Breeding of Horses."
"The Training of Horses."

DUKE, J. O., Ruthven.—Mr. Duke is a successful farmer in Kent County, and has given special attention to corn breeding and seed selection. His addresses, being founded on practical experience, are of much value to those who hear them.

Subjects:—

"Corn Growing."
"Improvement of Seed."
"The Peach Industry."
"Apple Culture in Western Ontario."
"Tile Drainage."
"Education for Farmers' Boys and Girls."
"Home Life on the Farm."

DYER, WM. D., B.S.A., Columbus.—Mr. Dyer is one of the successful farmers of South Ontario. His course at the College has been put to good use in making the "old farm pay." He has an up-to-date equipment, and is following common-sense advanced methods in all his work.

Subjects:—

"Rotation of Crops."
"Farm Buildings."
"General Care of Farm Stock."
"The Production of Milk."
"The Bacon Hog."

ELLIOTT, R. R., Owen Sound.—Mr. Elliott took a two years' course at the Agricultural College, and spent some years as herdsman at the Dominion Experimental Farm, but is now operating a farm of his own. His work in the service of the Dominion Department of Agriculture, and his practical experience upon his own farm, render him a valuable acquisition to the Institute staff.

Subjects:—

"The Bacon Hog."
"Breeding and Care of Dairy Cows for Best Results."
"Stable Management and Common Ailments of Cattle."
"Soil Cultivation."
"Beautifying Home Surroundings."

EMERSON, H. C., Corbyville.—Mr. Emerson has been directly associated with the Farmers' Institute for several years, being secretary of his local Institute and an acceptable delegate. Mr. Emerson has introduced the individual record system into his herd, and determines the actual expense and production of each cow. He has had great success in the extermination of weeds, recently clearing a field of sow thistle without loss of crop.

Subjects:—

"Judging and Breeding the Dairy Cow."
"Selection and Care of the Brood Sow and Young Pigs."
"A Practical Talk on Corn and the Silo."
"The Farmer's Interest in Good Seeds."
Evening: "The Land We Live In."

ESDON, JAS. H., Bainsville.—Mr. Esdon has been for many years farming in Glengarry County, a county noted for its dairy farms. He is a practical man, and talks to the farmer of his own methods in the breeding and care of cattle, the growing of crops and destruction of weeds.

Subjects:—

"Heavy Horses, their Breeding and Care."
"Treatment of the Dairy Cow."
"Swine Breeding and Dairy Production."
"Poultry for Profit."
"Care of the Calf Intended for Dairy Purposes."
"Rotation of Crops."
"Destruction of Weeds."

FISHER, W. F. W., Burlington.—Mr. Fisher is a large fruit grower, strawberries and pears being his special lines. He has one of the best dwarf pear orchards in Ontario, as well as a large orchard of standard pears. Besides this he has a mixed orchard of pears and apples. Mr. Fisher is secretary and manager of the Burlington Fruit Growers' Association, one of the oldest co-operative associations in the Province. This association ships largely in boxes to Glasgow. Mr. Fisher is much in demand as a speaker at the special fruit Institutes. Mr. Fisher is prepared to discuss all phases of practical fruit growing.

Subjects:—

"Cultivation of the Orchard."
"Pruning and Grafting."
"Spraying."

FOSTER, J. G., Myrtle Station.—Mr. Foster is a practical farmer, and makes a speciality of dairying. Mr. Foster was secretary of North Hastings Farmers' Institute for several years. His success in this capacity renders his services of special benefit to Institute officers in their local work.

Subjects:—

"Crop Rotation."
"The Bacon Hog."
"The Dairy Cow."
"Our Fodder Crops."
Evening: "The Land We Live In."

GARDHOUSE, JOHN, Highfield.—Mr. Gardhouse is a well-known breeder of Shorthorn cattle and long-wool sheep. All of the prize lists of our large fairs testify to his ability to raise high-class stock. He raises most of the food for his pure-bred stock, and is prepared to tell how he cultivates his land, plants his crop and mixes his foods so as to secure the best results from his live stock. Mr. Gardhouse will be found of special value to those Institutes where the officers wish to have practical work on heavy horses, beef cattle, or sheep.

Subjects:—

"Horse Breeding for Profit."
"Care and Management of Horses."
"How to Select and Feed Beef Cattle."
"Care and Management of Sheep."
"Raising Feed for Live Stock."

Evening: "How to Improve Present Farm Conditions."
"How to Interest the Young People in the Farm."

GLENDINNING, HENRY, Manilla.—Mr. Glendinning, besides breeding and feeding dairy cattle, has made a reputation as a producer of field seeds. For years he has studied the weed question, and has practically succeeded in eradicating the weed seeds from his fields and has been able to produce a quantity of seed almost free from impurities. With his seed charts, and talks on cultivation of the soil and rotation of crops, he has helped many farmers in Ontario to improve their methods of farming and to increase their profits. Mr. Glendinning is a most successful dairy farmer, and a director of the Eastern Dairymen's Association. He has made a marked success of growing alfalfa.

Subjects:—

"Growing Alfalfa."
"Growing Clovers."
"Cheap Production of Milk."
"Cultivation of the Soil and Destruction of Weeds."
"Farm Water Supply."

GOOD, W. C., B.A., Brantford.—Mr. Good, president of the North Brantford Farmers' Institute, is a graduate of Toronto University. He spent nearly two years as assistant chemist at the O.A.C., 1901-03, since which time he has followed farming, invariably taking part in Institute meetings. Mr. Good ably combines the scientific and practical in such a way that he is greatly appreciated as a speaker.

Subjects:—

"Corn and the Silo."
"Conservation of Soil Moisture."
"Principles of Stock Feeding."
"Alfalfa and Other Legumes."
"Stable Ventilation."

Evening: "Improvements in Rural Education."
"Organization among Farmers."
"The Farm Home."

GRIERSON, R. W., Oshawa.—Mr. Grierson has taken an active part in farming for thirty years, during which time he has been closely connected with Institute work. He has a grasp of many features of farm work which should be of use to his fellow-farmers.

Subjects:—

"Feeding and Care of Beef Cattle."
"Best Methods of Farm Improvement."
"Corn for the Silo, and Ensilage Crops."

Evening: "What the Farmers' Institute has Done for the Farmer."

GROH, ANSON, Preston.—Mr. Groh has demonstrated how a very ordinary farm can be made a money-maker to its owner at the same time that the fertility is being increased and improvements made. Mr. Groh has given close attention to farm forestry, a subject of importance to Ontario farmers. He has kept a daily individual milk record of his herd for eleven years. His experience in building silos, stables, walls and tanks with cement, and in the use of gasoline engines, renders his instruction on these lines of special value to farmers.

Subjects:—

"Farm Forestry."
"Lucerne and other Clovers."
"Soil Problems."
"Corn and the Silo."
"Fertility of the Soil and Conservation of Moisture."
"Systematic Rotation of Farm Crops."
"Care and Management of Dairy Herd and Hogs."

Evening: "The Stairway to Success."
"Three Generations in Waterloo County."

GROSE, HENRY, Lefroy.—Mr. Grose is the owner of a first-class farm in Simcoe County, and has been eminently successful in general farming. He has the happy faculty of presenting hard facts in a pleasing manner, and his address to boys on the farm is very instructive and uplifting. Mr. Grose has attended Institute meetings for two seasons with acceptance, and his services should be of special value in those sections where mixed farming is followed.

Subjects:—

"How to Increase and Maintain the Fertility of the Soil."
"Selection of Seed."
"Home Dairy Work."
"The Growing of Clover."

Evening: "The Canadian Boy and Girl."
"Benefits of Institute Work."

GURNEY, C. W., Paris.—Mr. Gurney is one of the progressive farmers of Brant County, and his success in general agriculture, with special emphasis on wheat and apple production, enables him to be of service to the great majority of Ontario farmers. The great bulk of tillers of the soil can be classed as "general farmers." They will get much of interest and value from Mr. Gurney, who has already rendered most acceptable service in local Institutes.

Subjects:—

"Breeding and Care of Sheep."
"Selection and Training of Horses."
"The Split-log Drag."
"Cereal Grains."
"Care of the Apple Orchard."
"Industrial Alcohol."

HALLMAN, A. C., Breslau.—Mr. Hallman was born and raised on a farm, and has been farming for himself over 20 years with great success, having built up an impoverished farm. He is a well-known breeder and feeder of Holstein cattle, and for years has been a prize-winner for hogs at some of our leading exhibitions. He has also judged at many of our fairs, including Toronto Industrial, hence his talk on the improvement of live stock has been well received by many farmers.

Subjects:—

"How to Improve Our Live Stock; Their Care and Feeding."
"The Bacon Hog and Export Trade."
"Cultivation of Corn and the Silo."
"Growing Sugar Beets for the Factory."
"Home Dairying."
"Noxious Weeds."

Evening: "The Farmer's Fruit Garden."
"Poultry on the Farm."

HARKNESS, A. D., Irena.—Mr. Harkness trained for two years in the O.A.C., from which he won an "Associate" diploma. With this exception he has lived on the farm all his life, and his advice re the dairy and orchard is indeed valuable.

Subjects:—

"Economic Production of Milk."
"How to Improve the Dairy Herd."
"Planting and Care of Orchard for First Ten Years."
"How to Combat Injurious Insects and Fungi."
"The Farmer's Garden."

HILBORN, J. L., Leamington.—For a long time the name of Mr. Hilborn has been familiar as one of the leading fruit growers in Lambton County. He owns a splendid fruit farm on the north shore of Lake Erie, which bears every evidence of thrift and prosperity. His buildings are neatly painted, and no weeds are allowed to grow to the detriment of the crops. A 6,000-gallon tank holds water which is used for irrigation.

Subjects:—

"Growing Early Vegetables for Commercial Purposes."
"Best Methods for Successful Peach Growing."
"Cement for Building Purposes."
"The Farmer's Fruit and Vegetable Garden."
"How to Make Apple-growing Profitable."

Evening: "Getting Pleasure and Profit Out of Farm Life."

HUME, ALEX., Menie.—Mr. Hume is a noted Ayrshire breeder in the County of Northumberland. He is also a noted prize-winner at our fall fairs. He is well prepared to discuss the dairy herd from all standpoints, and his services are much appreciated.

Subjects:—

"Building up a Dairy Herd—Breeding, Selection, Feeding and Care."
"Stable Construction and Water Supply."
"Growing of Suitable Crops for Dairy Herd."
"The Bacon Hog."
"Rotation of Crops and Application of Manure."

Evening: "Advantages of Farm Life."

HYATT, J. W., West Lake.—Mr. Hyatt has done much for the advancement of agriculture in his district, devoting much attention to the improvement of farm crops and the building up of the dairy breed. He has made a study of the growing of crops for canning purposes, and has been one of the moving spirits in the establishment of a local co-operative canning factory. Mr. Hyatt has had considerable experience in public speaking, and has the faculty of imparting his information in an attractive and forceful manner.

Subjects:—

"The Building up of the Dairy Herd."
"Soiling Crops for Farm Animals."
"The Market End of Farming."
"The Selection of Seed."
"Destruction of Weeds and General Cultivation."
"A Well-kept Farm and its Influence upon Home Life."
"Beneficial Effects of Living Close to Nature."

JAMES, D., Langstaff.—Mr. James took possession of the farm on which he now resides some thirty-four years ago, and has succeeded in converting it from a bed of weeds and rubbish into a clean, systematic and well-equipped farm. He is a believer in general farming, as will be seen from his list of subjects. Some thirty years ago Mr. James and his neighbors formed an association and held weekly meetings throughout the winter. At that time he began the collection of a library, and to-day has one of the best-equipped agricultural libraries to be found among practical farmers.

Subjects:—

"Destruction of Weeds."
"Home Dairying."
"Growing and Curing Alfalfa."
"Corn for Ensilage."
"The Farmer's Wood Lot."

Evening: "Some Mistakes Made by Farmers."
"Hits and Misses."

JARVIS, L. G., Grimsby.—Mr. Jarvis is a poultryman of wide experience, having acted as judge at most of the leading Canadian and American exhibitions. He is at present engaged in the production of poultry and eggs for market. He can be

depended upon to have up-to-date information along all lines of egg and poultry production.

Subjects:—

"Incubation."
"The Fattening and Marketing of Fowl."
"Housing of Poultry."
"Winter Eggs."
"The Farmer's Fruit and Vegetable Garden."

JEFFS, EDWARD, Bond Head.—Mr. Jeffs is a typical, up-to-date Ontario farmer. When grain-growing gave place to breeding in this Province, he went extensively into Shorthorns and sheep, becoming one of the largest exhibitors in York and Simcoe Counties, as well as a recognized judge. Mr. Jeffs has long been connected with the Institute as an officer, and was one of our early speakers. He is now secretary of his riding.

Subjects:—

"Tile Drainage."
"General Cultivation and Rotation."
"Winter and Summer Feeding of Live Stock."
"Improvements of Our Flocks and Herds."
"Importance of Good Seed."
"Lucerne and Other Clovers."

Evening: "Economy."
"Education of Farmers' Sons."

JOHNSON, D., Forest.—Mr. Johnson, president of the Co-operative Fruit Growers' Association of Ontario, has studied fruit-growing methods and marketing in California, Oregon, Washington and British Columbia, and visited most of the British and American markets. He is a capable and successful grower and shipper, and intensely interested in advancing the cause of the fruit industry in his own Province.

Subjects:—

"Care and Cultivation of Fruit."
"Insects and Fungi Affecting Fruit and Trees."
"The Spraying of Fruit."
"Marketing and Shipping of Fruit."
"Co-operation."
"Growing and Marketing of Berries."

Evening: "Fruit-Growing in California and Oregon."

JOHNSON, JAS. E., Simcoe.—Mr. Johnson is well known by fruit men throughout the Province of Ontario as a moving spirit in establishing and successfully conducting the Co-operative Fruit Association for Norfolk County, with headquarters in Simcoe. Judicious pruning, proper cultivation and thorough spraying have been the watchword with Mr. Johnson, and his enthusiasm has spread to a large number of the fruitmen, who heretofore had paid little attention to their orchards. Norfolk apples have an enviable reputation, due largely to the efforts of Mr. John-

son. It is well worth the while of a man with only a few trees to learn something of Mr. Johnson's methods.

Subjects:—

"Spraying Solutions and How to Apply Them."
"Management of Orchards—Pruning, Grafting, Cultivation and Fertilizing."
"Co-operative Picking, Packing and Marketing of Fruit."
"Packing Apples for Export Trade."

JONES, HAROLD, Maitland.—Mr. Jones is one of the pioneers who redeemed the reputation of the St. Lawrence Valley as a fruit district. He has made the "McIntosh Red" apple world-famous. Through the Provincial Fruit Experiment Station, located on his farm, he has demonstrated the advantages of clean cultivation, proper fertilization and persistent spraying. The heavy yield which his crops have made when other farmers have met failure amply bears out the value of his principles.

Subjects:—

"Cultivation and Care of Orchards."
"Injurious and Beneficial Insects."
"Fungi-Spraying Mixtures and their Application."
"Successful Potato Growing and Treatment for Blight."
Evening: "Our Bird Friends."

KERR, W. J., 253 Bell Street, Ottawa.—Mr. Kerr operates one of the largest "small fruit" farms outside the Niagara and Essex districts, strawberries and raspberries being his specialty. He is thoroughly familiar with the conditions which affect the fruit industry in Eastern Ontario, and is now entering his fourth season in Institute work.

Subjects:—

"Care of the Farm Orchard, Garden and Lawn."
"Commercial Fruit-Growing."
"How to Interest Our Young Folk in the Farm and Home."
"Short Talks on Poultry."

KYDD, W. F. Simcoe.—Mr. Kydd talks on horses, dairy cattle and small fruits. He has had a large, practical experience in all these departments, and being an aggressive, forceful speaker, his words carry weight. He has also had wide experience in fair matters, having been superintendent of the horse department of probably the largest purely agricultural show in the Province. He is also a judge of both light and heavy horses, and, as such, has been invited to place awards in many parts of Ontario. He is one of our most acceptable Institute speakers, and has done similar work in other Provinces.

Subjects:—

"Am I Raising the Most Profitable Horse?"
"The Dairy Cow, Her Summer Feed and Winter Care."
"Small Fruits and Grape Vines."
"Pruning and General Care of the Apple Orchard."
Evening: "Dropped Stitches."

Lewis, F. M., Burford.—Mr. Lewis has had much to do, as secretary, with the success of the South Brant Farmers' Institute. He has followed farming all his life, and is the owner of a good orchard and pays special attention to the production of potatoes. His success as a feeder of steers for beef, and pigs for bacon, has been quite marked.

Subjects:—

"Growing and Feeding of Alfalfa."
"Clover, the Key to Successful Farming."
"Green and Barnyard Manures, their Care and Application."
"Corn Growing, and the Silo."
"Potato Growing."
"The Farmers's Interest in Denatured Alcohol."
"Waste Places."

Lewis, R. W., Box 212, Hamilton.—Mr. Lewis has followed vegetable and fruit-growing in the vicinity of Hamilton for twenty-five years, and has had considerable experience in Institute work in the fruit sections of the Province. He has been employed by the Agricultural Department as an Inspector in the Fruit Branch.

Subjects:—

"Spraying."
"Pruning."
"General Care of the Orchard."
"Home Supply of Fruits and Vegetables."
"The Care of Farm Machinery."

McCalla, W. C., St. Catharines.—Mr. McCalla is one of the most progressive fruit-men in the St. Catharines peninsula. He has made a neglected farm produce a generous yield. Mr. McCalla has a very fine peach orchard, and he may be considered an expert on potato growing. His methods are up-to-date, and he pays much attention to details. Mr. McCalla is a clear and impressive speaker.

Subjects:—

"Tomato Growing."
"Peach Growing."
"Business Methods for Fruit Growers."
"Soil Fertility and Commercial Fertilizers."
"Potato Growing."
"Canning Factory Crops."
"Orchard Management."

McCallum, J. M., B.S.A., Shakespeare.—Mr. McCallum is a graduate of the O.A.C., and has, since his graduation, been putting into practice with good effect the lessons learned in his course. Mr. McCallum has been a most acceptable judge at the Fall Fairs, and has done some local Institute work. He is a forcible and convincing speaker.

Subjects:—

"Growing and Selection of Seed Grain."
"The Corn Crop."
"Alfalfa and other Clovers.
"Soil Cultivation."
"The Draught Horse on the Farm."
Evening: "The Problem of Keeping Ontario Boys and Girls on the Farm."

McLean, R. B., Kippen.—Mr. McLean has made a careful study of general farm conditions during his thirty years of practical experience. For many years he has realized the importance of Institute work, and has taken an active interest therein. Last year he rendered good service as a delegate for the Department, and is better prepared than ever to enter the field this year.

Subjects:—

"The Draught Horse—Breeding and Care."
"The Dairy Cow."
"Corn and the Silo."
"Farm Crops."
"Farm Weeds."
Evening: "The Ideal Farmer."
"Our Boys and Girls."

Mallory, Fred R., B.S.A., Frankford.—Since graduating from the O.A.C., Guelph, Mr. Mallory has devoted his attention to practical work on the farm. He keeps a number of pure-bred Holstein cattle, and produces milk in large quantities. The success attending the application of scientific principles to the practical work of the farm has been demonstrated by Mr. Mallory, and he has much of interest and value for the tiller of the soil.

Subjects:—

"Improvement of Dairy Herds."
"Rearing the Dairy Calf."
"Crops for the Dairy Farmer."
"The Relation Which Should Exist Between Producer and Manufacturer."
"How to Make the Institute a Success."

Murphy, Robt., Rosemont.—Mr. Murphy has had many years' practical experience upon the farm. Nor has he neglected his duty towards his county, having worked up from path-master on a side road to warden of Simcoe County. This summer he was called upon to judge field crops in Wellington County.

Subjects:—

"Soil Cultivation and Rotation of Crops."
"Loss and Gain as the Result of Seed Selection."
"Selection and Feeding of Beef Cattle."
"Shall Our Boys and Girls Remain on the Farm?"

Nash, C. W., 94 Lee Avenue, Toronto, author of "The Vertebrates of Ontario," has an international reputation in natural history. He has long been an authority on birds, and has written bulletins for the Department of Agriculture and the Department of Education on this important subject. His talks deal also with plant and insect life, as well as the rearing and breeding of domestic animals. Probably there is no one on the staff who can better interest young people at Institute meetings than Mr. Nash.

Subjects:—

"How Plants Grow."
"Stock Breeding."
"The Value of Our Birds."
"Our Insect Pests."
"Nature about the Farm."
"Farm Forestry."

PAGET, J. N., Canboro.—Mr. Paget is well known in dairy circles through his connection with the Western Dairymen's Association. He has been either director or president for a number of years, and is now a member of the directorate. Mr. Paget is particularly well known in his own district for the aggressive and up-to-date methods he has adopted in conducting his dairy business. He is not only a thoroughly practical man, but is capable of presenting the results of his experience in a clear and forceful manner.

Subjects:—

"Care and Production of Milk."
"Profit and Loss in Dairying."
"Handling the Finished Product Until It Reaches the Consumer."
"The Growth of Alfalfa and its Importance to Dairymen."
Evening: "The Relation Which Should Exist Between Producer, Proprietor and Maker."

PEART, A. W., Burlington.—Mr. A. W. Peart is well known as one of the successful fruit men of the Burlington district. His many duties in a private and public capacity prevent him from undertaking much Institute work. His services are always sought for, and the instruction given is much appreciated by fruit men generally.

Subjects:—

"Apples, Pears, Plums, Cherries, Blackberries, Raspberries, Currants; their Varieties, Cultivation, Marketing, etc."
"Insects and Fungi Injurious to Orchards, and Methods of Combating Them."
"Underdraining."
"The Application of Fertilizers."

PHILP, JNO. R., Maple Lane.—Mr. Philp is a practical farmer, and has for many years carried on farming operations on his 150-acre farm in South Grey. He is enthusiastic about the value of short rotation for combating weeds, and the appearance of his farm proves that he has made good use of the short rotation, as he has one of the cleanest farms in South Grey. Mr. Philp is also a well-known breeder of Shorthorn cattle and Leicester sheep. His past experience in public speaking enables him to present his subjects in a clear and forceful manner.

Subjects:—

"Clover."
"Soil Cultivation and Crop Rotation."
"Care and Application of Manure."
Evening: "Planting Trees and Beautifying the Farm."

RAYNOR, T. G., B.S.A., Ottawa.—There will be few, indeed, of our readers who do not know Mr. Raynor. He has been in nearly every Institute district in Ontario, as well as in some States of the Union. He is a good speaker, and is thoroughly familiar with his subjects. He is a graduate of the O.A.C., has been president of the old Central Farmers' Institute, and has been identified with nearly every progressive agricultural movement in Ontario during the past twenty years. Mr. Raynor now has charge of the Ontario work under the direction of the Seed Division of the Dominion Department of Agriculture.

Subjects:—

"Noxious Weeds and How to Eradicate Them."
"Seed Selection."
"Soil Cultivation."
"Potato Growing."
"How the Public School Boy Can Handle the Weed Question."

Evening: "Life's Opportunities."

RENNIE, SIMPSON, 454½ Ontario Street, Toronto.—The name of Rennie needs no introduction to the farmers of Ontario. Mr. Simpson Rennie was connected with the Agricultural Club formed in Scarboro Township thirty-five years ago, and attributes much of his success to the knowledge gained from the papers and discussions given at the club long before the establishment of Farmers' Institutes. Mr. Rennie is one of the best authorities we have on all lines of general farming. His farm won the gold medal in the "Good Farms Competition" in Ontario in 1883, and in 1886 won the first sweepstake prize open to all Ontario.

Subjects:—

"Weeds and How to Eradicate Them."
"Rotation and Cultivation of Crops."
"How to Improve Seeds and Grain by Selection."
"Cultivation of Roots and Corn."

RITTENHOUSE, S. H., Jordan Harbor.—Mr. Rittenhouse is one of the successful fruit growers who has specialized in strawberries. He has made a study of draining in its bearing on general cultivation, with a view to orchard improvement. He is prepared to give much valuable advice gleaned from his own experience.

Subjects:—

"Strawberry Growing."
"The Commercial Peach Orchard."
"Tile Draining."

Evening: "The Farmer's Home."

ROCHELEAU, DENIS, Tecumseh.—Mr. Rocheleau is one of the successful farmers of Essex County, and has been particularly successful in the production of market garden crops. His experience as a dairyman and in general farm work renders his instruction along these lines of special value. Mr. Rocheleau is able to give his instruction in both French and English.

Subjects:—

"Home Dairy Work."
"The Farmer's Fruit and Vegetable Garden."
"The Growing of Potatoes."
"Cultivation of the Land."

ROBERTSON, GEO. A., B.S.A., St. Catharines.—Mr. Robertson, after graduating from the O.A.C., spent some years with the most prominent fruit growers in the Grimsby section. He then took up land for himself near St. Catharines, and has been very successful in the growing of all kinds of fruits, especially sweet cherries. His efforts along poultry lines have met with equal success, and have led him to

believe that the combination of fruit and poultry yields surer and more abundant returns than the fruit business alone.

Subjects:—

"Raspberries, Peaches, Cherries, Pears, Tomato Growing, etc."
"Spraying."
"Under-draining."
"Poultry—Incubation, Breeding, Trap Nests, Housing, Feeding, Preparation for Showing, Co-operation in Marketing, etc." Demonstrations in comparison of conformation, also in trap nests, leg bands and toe punches.

SHEARER, W. C., Bright.—Dairying is the particular department of farming in which Mr. Shearer has been eminently successful. He has kept records of the feed consumed by the hogs produced during the past two seasons, and will be able to give information of much value regarding the feeding of sweet pasteurized whey in conjunction with other food stuffs. He is thoroughly practical, a good speaker, an Institute man of experience for some years past, and a most acceptable delegate. As will be seen from his subjects, Mr. Shearer is also prepared to discuss the bacon. seed and corn questions.

Subjects:—

"Production and Care of Milk and the Pasteurizing of Whey."
"Rotation of Crops and Selection of Seed."
"Breeding and Feeding the Bacon Hog."
"The Dairy Cow for Profit."
"Growing Corn Successfully."

Evening: "Successful Agriculture."

SHERRINGTON, A. E., Walkerton.—Mr. Sherrington is well up in matters pertaining to fruit culture, and is known in the Lake Huron district as a "co-operative farmer." Mr. Sherrington has conducted a fruit experiment station for the Ontario Department of Agriculture for some years, and speaks with authority on varieties. pruning, cultivation, spraying, packing, etc.

Subjects:—

"Orchard Management."
"Planting, Pruning and Grafting."
"Spraying as a Preventive of Insects and Fungus Diseases."
"Co-operative Marketing of Farm Products."
"Conservation of Soil Moisture."
"Selection of Seed Grain and the Eradication of Weeds."
"The Importance of Uniformity, Quantity and Quality in Farm Products (afternoon or evening).

Evening: "The Farmer's Fruit Garden."
"Beautifying a Farm Home."

SILCOX, F. H., Iona.—Mr. Silcox is a farmer's son and has managed a 100 acre farm of his own for the last ten years. He is a graduate of the Agricultural College and has applied his knowledge to good purpose in the breeding and marketing of light horses and Leicester sheep, as well as in his general farming operations. He is

an officer of the West Elgin Farmers' Institute and has had considerable training in public speaking.

Subjects:—

"The Breeding, Feeding and Management of Light Horses."
"The Sheep Industry."
"Growing of Alfalfa."
"Agricultural in Its Relation to National Progress."

SMITH, WM., Columbus.—Mr. Smith is one of the well-known breeders who have done much to raise the standard of Ontario-bred horses. He is a most forceful speaker, and his long, successful and wide experience enables him to speak with authority.

Subjects:—

"Feeding and Care of Horses."
"Desirable Conformation in Heavy Horses."
"Selection and Breeding of Beef Cattle."
"General Farm Management."
Evening: "Ideals for Our Young Men."

STANDISH, DR. J., Walkerton.—After a thorough training in practical work on his father's farm in the County of Wellington, Dr. Standish took a course in veterinary science and followed that profession for some twenty-five years. He has done considerable Institute work in Ontario and the other Provinces of the Dominion, and has been instructor in veterinary science at the Agricultural College, Truro, Nova Scotia, for the past two years. He has been a prominent judge of live stock at fall fairs for the past thirty years. Dr. Standish is an authority on the subject of horses, beef cattle and bacon hogs.

Subjects:—

"Breeding of Horses."
"Selection and Feeding of Beef Cattle."
"Requirements of the Bacon Hog Industry."
"Diseases of the Digestive System of Cattle."
"Unsoundness in Horses and the Best Means of Detecting the Same."
Evening: "Training of the Young Horse."
"Prevention of Diseases in Domestic Animals."

STEVENSON, R. S., Ancaster.—Mr. Stevenson is one of the oldest Institute workers in Ontario. Being a practical dairyman and breeder of dairy cattle, he has been identified with advanced dairy work in Ontario for a long time. During the past few years he has acted as judge of live stock at many fall fairs, and has given excellent satisfaction. No matter where he goes, Mr. Stevenson is always welcome, and is recognized as a man who thoroughly understands the work he undertakes to discuss.

Subjects:—

"A Practical Talk on Dairy Cows, Breeding, Feeding, Selecting, etc."
"Growing the Corn Crop and Handling It to the Best Advantage."
"How to Make Dairying More Profitable on the Average Farm."
"The Growing of Root Crops."
"The Cream Separator on the Farm."
"The Farm Water Supply."

SWALE, CECIL, Wiarton.—Mr. Swale is enthusiastic about corn ensilage. He has found it a paying feed, and has made many converts to its use in his locality. Mr. Swale is one of Ontario's most successful potato growers. This subject should receive greater attention on the part of Ontario farmers.

Subjects:—

"Corn, Mangels and Hay."
"Modern Potato Culture."
"Rearing and Feeding of Sheep."
"Clover Production and Destruction of Weeds."
"Care of Our Own Forests."
"Beneficial Birds of Prey, and Poultry Production."

THOMPSON, ROBT., St. Catharines.—Mr. Thompson is a practical fruit grower, as well as manager of the largest co-operative fruit company in Ontario, and has also had a wide experience in handling and shipping of fruit. He is interested in the subject of cold storage, and has practically demonstrated the need for such an institution in a large fruit business. Mr. Thompson is also a practical farmer, and in addition to his orchard work, raises large quantities of poultry and hogs.

Subjects:—

"Packing and Marketing of Fruit."
"Varieties—When and Where to Grow Them."
"Locations for Orchards and Fruit Plantations."
"Selection of Soil for Different Classes of Fruit."
"Canning Fruits and Vegetables."
"Cold Storage."

WATERS, B. J., Ivan.—Mr. Waters is one of the successful young farmers of Middlesex County. He has rendered satisfaction to the Department in the judging of beef cattle and sheep, also in the judging of field crops. Mr. Waters owes his start to the debating club and Farmers' Institute, in which latter he was always in great demand when the meetings were thrown open to discussion. Mr. Waters is a capable, earnest and thoroughly practical speaker. He is qualified to conduct judging classes in beef cattle and sheep.

Subjects:—

"Weeds—Identification and Eradication."
"Sheep as Mortgage Lifters."
"The Beef Bullock, from Pail to Block."
"Agricultural Education."

WIDDIFIELD, J. W., B.S.A., Uxbridge.—Mr. Widdifield has, since his graduation from the O.A.C., managed a farm successfully in Ontario County. Mr. Widdifield is much sought after to assist in local Institute work, and his success as a practical farmer has induced the Department to send him to a few regular meetings. After visiting the North-West, Mr. Widdifield returned well satisfied with the conditions in Ontario, and should be able to state to the young farmers of this Province something which will be an incentive to them to put forth greater efforts to improve and extend their agricultural operations.

Subjects:—

"Increasing and Preserving Soil Fertility."
"Clover, Corn and Roots."
"Implements of Cultivation and Their Proper Uses."
"How to Preserve a Moist Soil in a Dry Season."
"Destruction of Noxious Weeds."

Evening: "Nature Study."
"The Poetry of Farm Life."

YOUNG, R. M., Carlaw.—Mr. Young has demonstrated his usefulness as an Institute worker in his local society, having held office and also given lectures on agricultural matters. He is a practical farmer of wide experience.

Subjects:—

"Care of the Dairy Herd."
"Rotation of Crops."
"Selection and Care of Sheep."

Evening: "Improvement of Canadian Homes."

DISTRICT REPRESENTATIVES OF THE DEPARTMENT OF AGRICULTURE.

The Provincial Department of Agriculture and Education have co-operated in establishing courses in agriculture, as indicated below. In addition to giving instruction in agriculture in the school, the representative is in charge of an office, which is used by the farmers of the district for agricultural meetings and for consulting with the representatives upon all matters of interest to them as farmers. The representatives make it their business to assist in all lines of agricultural work throughout their counties, and Institute Secretaries are requested to consult with the representatives concerned regarding topics to be announced for the meetings to be held this winter. Secretaries should not, however, announce a High School representative for meetings until they have corresponded with him regarding the matter and secured his promise to attend.

The representatives are ready to lend their influence in establishing local Farmers' Institute Clubs, and we consider that an opportune time to make a start in this direction is at the time of the Winter Institute meetings.

County.	Representative.
Carleton	Sirrett, H., Carp, Ont.
Dundas	Campbell, A. D., Morrisburg.
Essex	McKenney, A., Essex.
Lanark	Hamer, R. S., Perth.
Norfolk	Angle, Paul E., Simcoe.
Ontario	Hare, J. H., Whitby.
Peterboro'	Duff, Hugh C., Norwood.
Pt. Edward	MacVannel, A. P., Picton.
Simcoe	Metcalf, I. F., Collingwood.
Victoria	Mackenzie, D. A., Lindsay.
Waterloo	Hart, F. C., Galt.

WOMEN'S INSTITUTE LECTURERS AND THEIR SUBJECTS, 1909-10.

ASHLEY, MRS. M. L., Londesboro.—Mrs. Ashley has had four years' experience as superintendent of a hospital and two years as a representative of the Department at Women's Institute meetings. She has had experience in the best methods of home management, and for years has taught and addressed large gatherings. The subjects announced for Mrs. Ashley are among the most important for the members of Women's Institutes, and she presents them in a convincing and helpful manner.

Subjects:—

"Responsibilities of Mothers to Daughters, and vice versa."
"The Feeding and Care of Infants."
"The Sacredness of the Body."
"Simple Meals—their Refining Influence."
"Sanitation and Hygiene."
"The Secret of a Nation's Power."

BRETHOUR, MRS. J. E., Burford.—Mrs. Brethour has been a most progressive and successful district officer in South Brant, and has also given assistance to many of the Institutes surrounding Brant. She will be remembered as one who has taken part in our annual convention, and her advice and suggestions will always be found helpful.

Subjects:—

"The Hurry, Worry and Waste of Modern Housekeeping."
"Simple Entertaining, or the Possibilities of Social Intercourse in the Country."
"How to Make the Institute a Success."

CAMPBELL, MRS. COLIN, P.O. Box 296, Windsor.—Mrs. Campbell is one of our most experienced workers, and the success attending her efforts in the production of poultry, small fruits and vegetables, places her in a position to give information and suggestions of great assistance to the Institute members. Her long experience as an Institute officer and lecturer enables her to give most valuable advice and suggestions as to methods of work and conducting the Institutes.

Subjects:—

"Canning Fruits and Vegetables."
"The Care and Uses of Milk."
"The Comparison of Our Common Foods."
"Care and Feeding of Young Chickens and Young Turkeys."
"Is Poultry-keeping Profitable, or is it a Losing Business?"
"The Farmer's Fruit and Vegetable Garden."
"The Education of the Boy and Girl Who Remain on the Farm."
"Home and its Problems."
"The Housekeeper and Her Importance to the State."

CAMPBELL, MISS S., Brampton.—Miss Campbell is one of those speakers who leave audiences enthusiastic in pursuing definite lines of work. She has a wide range of those subjects which are most needed by the woman and girl on the farm.

Her success in extending the Women's Institute throughout Peel County has been most marked, and her advice to officers should prove of great value to them in furthering the interests of the Institutes.

Subjects:—

"The Ideal Home."
"Character."
"A Young Lady's Accomplishments."
"The Influence of Women."
"The Judicious Housekeeper and Homemaker."
"Home and School."
"Our Fair Dominion."
"Demonstrations in Needlework."

CARTER, MISS G., 26 Nottingham Street, Guelph.—Miss Carter is a graduate in dairying, and has had an opportunity of applying her scientific knowledge to practical dairying. She has also had the advantage of instruction at Macdonald Institute. Her list of subjects indicates the broad field covered. Miss Carter is one of our most experienced and acceptable workers, and the Institutes may rest assured that service of value will be rendered.

Subjects:—

"Value of Fruits in Diet, and their Use in Making Simple Desserts."
"Simple and Necessary Kitchen Contrivances."
"The Daily Use of Milk and Eggs."
"The Home—from Different Standpoints."
"The Sunny Side of Life."

CLELAND, MISS B. D., Newmarket.—Miss Cleland is a normal graduate of the Macdonald Institute, Guelph, and has had extended experience in public school teaching. Her practical experience in household management, together with her scientific training, enables her to impart information in such a way that the practical housekeepers who have not had scientific training may get the greatest benefit therefrom. Miss Cleland has taken an active part in Women's Institute work in older Ontario, as well as in some sections of the north-western part of the Province.

Subjects:—

"Value of Meat in Our Diet."—Illustrated by chart.
"The Care and Uses of Milk."
"Sanitation and Hygiene."
"The Value of a Women's Institute to a Community."
"The Young Girl's Place in the Home."
"Making the Best of Our Opportunities."
"Sweet Pea Culture."

DUNCAN, MISS B., Emery.—In addition to her full course at the Hamilton School of Domestic Science some years ago, Miss Duncan has recently further qualified herself in a special course in dietetics at the Macdonald Institute, Guelph. Having had experience in both country and city life and the benefit of a number of years' work in connection with the Women's Institutes, Miss Duncan is in a position to give a practical application of her scientific knowledge, which should prove of great profit to the home-makers of the Province.

Subjects:—

"Uses of Food to the Body."—Illustrated by chart.
"Diets Suitable for Different Ages and Occupations."
"Hints on Selecting and Caring for Meats."
"Everyday helps for the housewife."
"Girls and their ideals."
"Country homes."
"Dollars and sense in the household."

DUNCAN, MISS L., Emery.—Miss Duncan has been markedly successful in extending the work of the Women's Institute in West York. Her suggestions to Institute officers, as to ways and means of interesting all classes and ages and making the meetings most helpful, will be much appreciated.

Subjects:—

"House plants."
"Systematic Housework."
"Simple home decorations."
"Ways of arousing interest in civic improvement."
"Institute work—helpful hints to officers."

GILHOLM, MISS B., Bright.—Miss Gilholm has been an efficient officer of the District Women's Institute of North Oxford and is able to render much assistance to officers of both district and branch Institutes. Miss Gilholm has taken the regular creamery course at the Guelph Dairy School and holds a specialist's certificate in butter making, as well as a diploma in the theory and art of butter making. Miss Gilholm's knowledge and appreciation of country life places her in a position to impart knowledge in a manner much appreciated by the members in general.

Subjects:—

"Will the dairy cow remove the mortgage?"
"Milk, cream, soft and fancy cheese."
"Our friends and foes—bacteria."
"Institute work."
"Our ain fireside."

GRAY, MISS G., 650 Bathurst Street, Toronto.—Miss Gray needs no introduction to the majority of Institute members in Ontario, as she has visited nearly all sections in which the work has been organized. She has, for the past two years, devoted some time to similar work in New York State. She is a thorough master of the subjects announced and presents her information in a clear, forceful and attractive manner.

Subjects:—

"Human nutrition."—Illustrated by food chart.
"Cuts and preparation of meats."
"How to improve home conditions."
"Interior decorations of the home—illustrated."
"Life's talisman."
"Our assets."

HUNTER, MRS. W. J., Brampton.—Mrs. Hunter is one of our progressive Women's Institute members, and has been of great assistance as a district officer in furthering the work in Peel county. She is mistress of a fine country home, and has given addresses at a number of local Institutes, as well as the annual convention held in Guelph.

Subjects:—

"The making of meat pies."
"Systematic housekeeping."
"The benefits of Institute work."
"Our advantages in country life."
"A plea for the boy."
"Don't worry."

LOREE, MRS. V. G., 45 Wellington Street South, Hamilton.—Mrs. Loree is a graduate nurse, and has had considerable experience in lecturing in towns and country places upon such subjects as indicated by her list.

Subjects:—

"The care of the sick at home."
"Self control and the effect of temper."
"The training and teaching of the daughter."

MCALPINE, DR. MARGARET, 619 Bathurst St., Toronto.—Dr. Margaret McAlpine is a practising physician, and her lectures are much in demand in connection with various educational institutions in this city. During the series of meetings she attended last summer, Dr. McAlpine was most deeply and favourably impressed with the work accomplished by Institute women in less than ten years.

In *The Home Journal,* October, 1909, Dr. McAlpine recognizes in the general interest of young girls as well as women a splendid augury for the future homes in Canada. "There is, I believe, no large organization of women in Canada to-day whose work is so far-reaching and productive of good and visible results as the Women's Institutes."

Subjects:—

"How to be well and happy.
"Heredity."
"Perfect womanhood."
"Work and recreation."
"Emergency treatment."
"Fresh air and tuberculosis."

MCMURCHIE, MISS H., Harriston.—Miss McMurchie is a Macdonald Institute graduate. She understands domestic economy as applied to the country home, and is highly appreciated as an Institute worker.

Subjects:—

"Food Values."—Illustrated by chart.
"Home hints on home dressmaking."
"Table setting and serving."—Illustrated.
"The planning and remodeling of farm houses."—Illustrated.
"Books in the home."
"The value of pictures."—Illustrated.

MacMurchy, Dr. Helen, 133 Bloor St. E., Toronto.—Dr. MacMurchy's professional duties prevent her from devoting much time to Women's Institutes. However, the limited time which she gives is much appreciated by the Department and by the Institute members. Her addresses are pointed, full of enthusiasm, and always adapted to the needs of the locality visited.

Subjects:—

"Home Hygiene."
"Home Nursing."
"The health of women and girls."
"The education of girls."
"Accidents and emergencies."
"Nervous prostration."
"Disease germs."
"Tuberculosis."
"The day's work."

Powell, Miss M. V., Box 453, Whitby.—Miss Powell is a practical housekeeper, and has kept in close touch and sympathy with home life in the country. Her experience in addressing meetings enables her to impart her knowledge in an interesting and helpful manner. Miss Powell is an active member of the Women's Institute.

Subjects:—

"Value of cheerfulness."
"Refinement in the home."
"Demonstrations in needlework."
"Character building."
"Canada, our home."

Reynolds, Miss Lulu, 754 Gerrard St. E., Toronto.—Miss Reynolds has had extended experience as secretary of the East York Women's Institute. She has also assisted her father in his work as secretary of the Farmers' Institute. Her extended experience places her in a position to be of much assistance to Institute officers wherever she may attend meetings. She is a most enthusiastic worker, and her addresses are well received.

Subjects:—

"Foods; their different constituents."—Illustrated by chart.
"Horticulture."
"Character building."
"How to make the Institute a success."

Rose, Miss Laura, Guelph.—Miss Rose needs no introduction to the Women's Institutes of Ontario. Her ability as a public speaker and her wide knowledge of affairs place her in a position to render the best services to the Institutes. She has charge of the Home Dairy Department of the Agricultural College, and has instructed many farmers' sons and daughters in the art of butter-making. Miss Rose has travelled from the Atlantic to the Pacific in connection with Institute and other instruction work along home-making and dairy lines.

Subjects:—

"How to Increase Dairy Profits."
"Butter Making on the Farm—Its Difficulties and How to Overcome Them."
"What Milk Is and How It Should Be Cared For."
"A Talk to Housekeepers on Housekeeping."
"The Making of Bread and Buns."
"The Influence of Environment."
"The Head, the Hand, the Heart—the Tripod of Successful Work."
"One Eye in the Field and the Other in the Town."

SHUTTLEWORTH, MISS L., 7 Chicora Avenue, Toronto.—Miss Shuttleworth has had broad experience in dairy work and household management, which, with her clear, practical insight, qualifies her as an Institute speaker of great resource. Miss Shuttleworth gave dairy instruction in the Strathroy Dairy School, Ontario, and in the travelling dairies of Nova Scotia. She has judged at the Toronto and Ottawa Exhibitions, as well as at several other fairs.

Miss Shuttleworth gives invaluable information regarding the use of raw and canned fruits, particularly apples, which she uses as a base for several delicious varieties of jelly.

Subjects:—

"Cool Dishes for Summer Use."
"Fruits—Methods of Canning, Preserving, etc."
"Health—the Basis of Womanly Beauty."
"Short Talks and Discussions on Cream Separators, Dairy Utensils and their Care, Churning, Care of Milk, Cream."
"The Needs of the Dairy Industry."
"Home Influence."

WATTS, MRS. F. W., Clinton.—Mrs. Watts has proved herself an efficient officer as district secretary of the West Huron Women's Institute. She has had some experience in Institute work, and uses great care in the preparation of her subject matter.

Subjects:—

"Home Nursing—Demonstrated.
"The Bath, Fresh Air and Exercise."
"What Mothers and Daughters Should Know and Remember."
"The Benefits of Women's Institutes."
"Happiness in the Home."

WOELARD, MRS. W., Forest.—Mrs. Woelard has taken a deep interest in Women's Institute work in Forest, and has materially assisted in the extension of the work throughout Lambton County. She is intensely interested in all matters which pertain to the home, and her addresses have been much appreciated. We can assure Institute officers and members that Mrs. Woelard will have messages which will be of benefit.

Subjects:—

"Poultry Raising as a Business for Women."
"Plain Sewing and Art Needlework"—Demonstrated.
"Heredity and Environment."
"Canning Fruits."
"Good Effects of Sunshine, Baths and Pure Air."
"The Responsibilities of Parents."
"The Home."

YATES, MISS M., O.A.C., Guelph.—Miss Yates, late instructor at Studley Agricultural College, Warwickshire, England, is a certified poultry export, and has had experience in the business management of a poultry farm. Miss Yates attended the 1908 summer class in elementary agriculture, held at the O.A.C. Her services at poultry Institutes are much appreciated. She is prepared to give practical demonstrations as indicated below.

Subjects:—

"The General Management of Poultry on the Farm."
"Specializing in Winter Egg Production."
"Table Poultry."
"A Method by Which to Combine Poultry Keeping with a Garden."
"Home Economics."
"Our Servants—Earth, Air and Water."
"Problems of the Home—Financial Training, etc."
"The Effects of Co-operation of Women upon the Community."
"Labor Saving in the Home."

Demonstrations:

REQUIREMENTS.

a. A substantial table, not too high.
b. A dozen newspapers.
c. A cloth and a pail of water.
d. A pail for refuse.

1. KILLING, PLUCKING AND SHAPING FOR MARKET.—Requirements: Live bird that has been fasted at least 24 hours at time of demonstration, and a good sized receptacle for feathers.

TRUSSING FOR TABLE.—Requirements: A bird that has been killed after fasting 24 hours. It should be dry picked, and the head and feet should be left on. It should be cold at time of Demonstration, but should not have been killed more than a few days.

BONING.—Requirements: A bird that has been killed 24 hours and then dry picked.

4. CARVING.—Requirements: A whole cooked bird and a sharp carving knife and fork.

MEMORANDA

REPORT

OF THE

WOMEN'S INSTITUTES

OF THE

PROVINCE OF ONTARIO

1909

PART I.

(PUBLISHED BY THE ONTARIO DEPARTMENT OF AGRICULTURE, TORONTO)

PRINTED BY ORDER OF
THE LEGISLATIVE ASSEMBLY OF ONTARIO

TORONTO
Printed by L. K. CAMERON, Printer to the King's Most Excellent Majesty
1909

Printed by
WILLIAM BRIGGS,
29-37 Richmond Street West,
TORONTO

To the Honourable JOHN MORISON GIBSON, K.C., LL. D., etc., etc., etc.

Lieutenant-Governor of the Province of Ontario.

MAY IT PLEASE YOUR HONOUR:

I have the pleasure to present herewith for the consideration of your Honour the Report of the Women's Institutes of Ontario for 1909.

Respectfully submitted,

JAMES S. DUFF,

Minister of Agriculture.

TORONTO, 1909.

CONTENTS.

PAGE

ANNOUNCEMENT OF SUPERINTENDENT 5
STATISTICAL REPORTS OF LOCAL WOMEN'S INSTITUTES 7
ANNUAL CONVENTION:
Address of Welcome: G. C. CREELMAN 11
Reply to Address: MRS. W. J. HUNTER 15
Ontario Women's Institutes: G. A. PUTNAM 18
Institute Finances 23
Address: MISS M. YATES 24
Reports from Institutes 26
Problems of the People: C. C. JAMES 33
The Value of Farm Home Life: MISS MARTHA VAN RENSSELAER 38
Household Conveniences: MISS MARTHA VAN RENSSELAER 43
How the Macdonald Institute May Help the Women's Institutes: MISS M. A. WATSON 48
Question Drawer 49
House Plants: WM. HUNT 52
Women's Part in the Pure Milk Problem: MISS LAURA ROSE 61
Dangers in Milk: DR. HELEN MACMURCHY 64
The Care of Milk: H. H. DEAN 66
Bacterial Contamination of Milk: S. F. EDWARDS 68
Milk and Children: JAMES ACTON 70
Food Value of Milk: R. HARCOURT 73
SELECTED PAPERS AND ADDRESSES:
Asepsis in the Home: JOHN LEWIS MEEKER 75
Disease Germs: MISS JENNIE SMILLIE 78
Infant Mortality: DR. HELEN MACMURCHY 81
Labor Saving in the Home: MISS MARY YATES 86
Water System in Country Homes: G. B. SNYDER 93
Hints for the Home Nurse: MISS B. MILLAR 98
Health and Beauty: MRS. M. L. WOELARD 101
Who is Responsible: MRS. F. W. WATTS 105
The Hurry, Worry and Waste of Modern Housekeeping: MRS. J. E. BRETHOUR 106
Worry is Worse than Work: MRS. J. B. FRASER 108
The Use of Books: MISS HELEN MCMURCHIE 110
Country Homes: MISS B. DUNCAN 114
How to Make the Institute a Success: MISS LULU REYNOLDS 117
The Object of Our Branch of the Women's Institute: MISS A. H. WALLBROOK 118
Feeding of Young Chickens and Young Ducks: MRS. COLIN CAMPBELL 120
Sweet Pea Culture: MISS B. D. CLELAND 121
OFFICERS OF WOMEN'S INSTITUTES 123

REPORT

OF THE

Women's Institutes of Ontario

1909

To the Honourable Minister of Agriculture.

Sir,—I have pleasure in submitting herewith the annual report of Women's Institutes of the Province. In addition to this volume we issue Part II, which contains announcements of the summer series of meetings, together with list of speakers and their subjects. You will note from this that the work is gradually extending to new sections of the Province and meetings are being held for the first time at additional points in those localities where the work has been established for a number of years. The women in the northern section of the Province are showing a deep appreciation of the opportunities afforded through the Institute for self-improvement; and the papers and reports of meetings received from that section indicate that much good is being done in the interest of home and community life.

The organization has gradually extended during the past year and a larger percentage than usual of the branches have held regular meetings throughout the year. We now have 522 Institutes, and the indications are that the membership will be considerably in advance of last year.

The permanency of the work is indicated by the large number of young women and girls who are joining the Institute and taking an active part in the meetings. This assistance consists not only in readings, recitations, and music, but the handling of practical subjects in a way which is interesting and profitable to the girls. Demonstrations in mending and cutting of garments, simple cooking, etc., are features of the work done by the young girls.

In those sections where the work has been established for some years, an increased interest is being taken in the growing of flowers, planting of shrubbery, installation of labor saving devices, etc. Not only has the Institute influenced the home, but the members have gone out among the schools to see that the surroundings are sanitary and that some attention is given to beautifying the school grounds, and local councils have been approached with a view to inducing them to spend time and money in improving the appearance of streets in villages and towns. Assistance has been given by the Institutes in the installation of street lamps, putting down of side-walks, planting of trees, etc. Such work as this cannot be done unless the Institute concerned either secures money from some local source to assist them in their undertakings, or raises funds by holding concerts, tea-meetings, etc. The number of libraries established is an index of the influence which the Institute is having upon the literary tastes of the people. In a majority of cases the Institute co-operates with the local library, particularly in the purchase of books and periodicals which are of special interest to the home makers.

We wish specially to call the attention of our readers to the reports given by prominent officers upon the work done in their respective localities, see page 26.

One of the most successful and profitable features in connection with the Institute work is the Annual Convention held at Guelph. The full report, which speaks for itself, is given in this volume. We wish, however, to express our gratitude of the members of the Macdonald staff and others who help to make this annual convention such a success and to enthuse the delegates with the importance of the work in hand. There is nothing which does more to stimulate those who have come as delegates to more aggressive and thorough work. This convention is being supplemented by local conventions in many parts of the Province, some of them including only one county, while others embrace several counties.

The efficient and earnest corps of Institute lecturers who have been enlisted in the Women's Institute work have done much to place the Institute work upon a substantial basis. Several of these workers have been secured by other provinces in the Dominion and by states of the Union for work similar to that done in Ontario. In Women's Institute work, Ontario certainly stands out as leader, and, while the work has extended considerably, and the results are most satisfactory, we believe that much better things are in store for the future.

It is quite customary now for the members of one Institute to visit an adjoining society and render the programme for the day, with the result that the programmes are most interesting and helpful. In those localities where Farmers' Institute Clubs have been established, and we are pleased to know that the number is gradually increasing, the custom is, generally speaking, for the two societies, the Farmers' Club and the Women's Institute, to join forces for occasional meetings. When practical subjects are taken up, separate sessions are held, but, if, in the wisdom of the officers of the two societies, it is thought well to have a social evening, entertainment, debate, spelling match, etc., then we find co-operation between the two organizations.

The Institute is not only creating a bond of friendship among members, but is also bringing the communities in different sections of the Province into closer touch.

Respectfully submitted,

GEO. A. PUTNAM,

Superintendent

Institute District.	Membership.	Meetings held.	Total attendance.	Papers read or addresses delivered.	Receipts.					Expenditure.								
					Cash on hand per last Report.	Members' fees.	Grants.	Miscellaneous.	Total receipts.	Expense for meetings.	Officers' salaries and expenses.	Postage and stationery.	Printing and advertising.	Lecturers' wages and expenses.	Periodicals for members.	Miscellaneous.	Total expenditure.	Balance on hand.
					$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Amherst Island	56	12	230	19	2 65	7 25	19 85	2 52	32 27	.....	12 50	1 87	.....	4 00	9 65	40	28 42	3 85
Brant, N	116	54	1,597	103	53 93	38 00	50 00	12 95	154 88	10 00	22 75	8 18	9 90	5 90	18 50	36 44	111 67	43 21
Brant, S	167	33	1,050	68	79 70	33 00	59 00	01	171 71	14 81	35 00	9 71	7 50	13 32	6 35	12 25	98 94	72 77
Bruce, C	115	35	1,076	91	62 94	27 75	63 00	91	154 60	9 25	41 50	6 91	12 09	12 95	3 10	33	86 13	68 47
Bruce, N	72	27	440	45	46 86	13 50	32 00	.....	92 36	.....	2 00	6 05	3 75	7 90	12 00	27 00	58 70	33 66
Bruce, S	136	44	1,030	51	61 63	20 75	59 00	17 13	158 51	2 00	10 00	4 38	8 55	12 75	.....	14 20	51 88	106 63
Bruce, W	138	45	923	70	36 40	31 50	69 00	12 56	149 46	7 20	31 50	4 72	14 00	11 00	18 15	11 75	98 32	51 14
Carleton	98	22	463	32	7 50	22 00	28 00	.....	57 50	4 00	.....	4 90	3 25	1 50	.....	4 75	18 40	39 10
Dufferin	193	109	2,346	124	71 70	48 25	93 00	49 26	262 21	24 75	49 45	14 72	16 83	20 70	18 90	36 97	182 32	79 89
Dundas	122	42	1,114	76	15 49	30 75	64 00	6 45	116 69	22 27	21 25	7 95	16 85	2 60	.....	4 45	75 37	41 32
Durham, E	96	63	1,422	48	79 63	68 75	80 00	103 02	331 40	8 75	12 75	9 37	9 60	36 35	11 27	151 19	239 28	92 12
Durham, W	111	52	1,007	40	39 15	35 25	75 00	7 17	156 57	6 00	15 00	7 39	9 50	6 65	42 05	14 13	100 72	55 85
Elgin, E	230	76	2,559	92	23 39	55 75	84 00	267 94	431 08	21 56	25 00	10 34	19 75	19 20	1 90	157 22	254 97	176 11
Elgin, W	87	23	655	27	45 83	18 75	47 00	85	112 43	18 25	10 65	3 10	7 75	10 75	1 75	16 55	68 80	43 63
Essex, N	170	46	1,849	66	48 64	28 00	38 00	.....	114 64	6 35	11 55	5 87	6 50	14 00	1 30	23 30	68 87	45 77
Essex, S	263	56	1,381	90	32 58	46 25	54 00	6 75	139 58	2 60	30 70	10 65	8 85	7 75	6 60	6 35	73 50	66 08
Grenville, S	23	6	603	14	.....	6 00	.....	.....	6 00	.....	.....	20	.....	.....	.....	.....	20	5 80
Grey C	347	106	2,783	178	93 17	80 50	98 00	166 27	437 94	27 25	53 60	14 76	13 60	54 25	43 84	78 37	285 67	152 27
Grey, N	209	75	1,543	109	87 37	52 15	68 00	32 00	239 52	19 50	28 30	13 31	9 75	47 55	14 03	22 80	155 24	84 28
Grey, S	207	64	2,226	119	33 48	46 50	56 00	64 42	200 40	16 85	12 70	5 80	6 85	25 25	2 42	40 55	110 42	89 98
Haldimand	434	170	4,770	351	147 05	119 75	138 00	17 92	422 72	49 93	83 35	24 31	14 05	37 70	51 76	32 45	293 55	129 17
Haliburton	78	37	580	38	13 00	17 75	12 00	47 14	89 89	1 25	1 75	2 04	1 50	.....	.....	17 50	24 04	65 85
Halton	476	131	4,172	150	107 11	116 75	98 00	131 51	453 37	45 98	82 60	17 12	9 75	21 10	12 80	114 36	303 71	149 66
Hastings, E	182	50	1,605	71	87 27	49 50	54 00	40 82	231 59	27 05	29 00	5 00	12 27	26 40	.....	39 96	139 68	91 91
Hastings, N	144	72	1,209	109	93 54	35 00	59 00	33 49	221 03	10 30	22 30	6 10	4 27	3 00	24 36	42 55	112 88	108 15
Hastings, W	64	11	172	30	03	14 50	20 00	51	35 04	1 00	20 00	1 50	1 07	6 00	.....	.....	29 57	5 47
Huron, E	184	59	1,739	63	16 35	47 25	60 00	5 49	129 09	27 40	25 00	8 23	2 30	12 80	87	18 83	95 43	33 66

REPORTS OF LOCAL WOMEN'S INSTITUTES, 1908-09—Continued.

Institute District.	Membership.	Meetings held.	Total attendance.	Papers read or addresses delivered.	Receipts.					Expenditure.								
					Cash on hand per last Report.	Members' fees.	Grants.	Miscellaneous.	Total receipts.	Expense for meetings.	Officers' salaries and expenses.	Postage and stationery.	Printing and advertising.	Lecturers' wages and expenses.	Periodicals for members.	Miscellaneous.	Total expenditure.	Balance on hand.
					$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Huron, S	63	20	158	23	29 77	17 00	22 00	19 03	87 80	15 25	17 00	4 42	5 25	8 00	11 28	17 13	78 33	9 47
Huron, W	221	73	1,920	72	34 13	50 25	70 00	5 70	160 08	12 62	33 85	12 67	1 50	11 60	2 20	30 62	105 06	55 02
Kent, E	168	52	1,387	78	38 52	47 25	44 00	.....	129 77	6 00	10 00	8 23	11 60	20 45	25	.....	56 53	73 24
Kent, W	103	59	1,425	102	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Lambton, E	198	48	1,551	96	28 38	53 50	38 00	18 50	138 38	12 85	15 00	4 89	7 19	7 45	5 08	18 00	70 46	67 92
Lambton, W	77	37	755	66	52 44	23 25	38 00	.....	113 69	8 00	10 00	4 96	7 50	10 61	.....	10 20	51 27	62 42
Lanark, N	15	12	322	9	.....	5 25	10 00	.....	15 25	.....	.....	31	.....	.....	.....	.....	31	14 94
Lanark, S	38	12	948	28	.....	20 50	10 00	6 00	36 50	.....	.....	1 94	7 50	3 25	.....	13 85	26 54	9 96
Lennox	50	12	333	8	7 50	12 50	20 00	45 90	85 90	2 50	10 00	3 38	50	.....	29 30	14 95	60 63	25 27
Lincoln	179	31	1,104	58	67 16	49 50	44 00	71 37	232 03	21 75	35 35	6 96	7 50	14 10	1 35	90 83	177 84	54 19
Middlesex, E	111	27	734	35	... .	21 75	19 00	69 12	109 87	4 00	.....	3 05	3 50	2 65	.....	17 80	31 00	78 87
Middlesex, N	313	99	3,513	170	203 40	71 50	93 00	39 03	406 93	22 37	56 90	15 60	8 95	30 40	7 55	58 35	200 12	206 81
Middlesex, W	140	29	1,286	67	30 67	38 50	43 00	2 10	114 27	8 50	15 00	4 02	2 00	8 70	11 17	27 41	76 80	37 47
Monck	158	62	864	73	14 04	37 00	38 00	66 55	155 59	8 09	15 00	5 41	8 95	13 50	6 15	41 74	98 84	56 75
Muskoka, C	50	26	312	24	33 79	13 00	28 00	5 87	80 66	.....	5 00	3 49	1 13	3 50	17 50	23 76	54 38	26 28
Muskoka, N	50	29	573	31	19 31	10 75	28 00	5 95	64 01	1 00	10 00	3 94	1 75	.....	3 85	13 81	34 35	29 66
Muskoka, S	94	43	634	42	123 49	25 75	52 00	47 78	249 02	2 00	9 25	8 68	3 25	12 00	16 59	41 85	93 62	155 40
Norfolk, N	92	53	1,235	78	70 59	21 50	63 00	12 53	167 62	2 70	15 00	6 85	3 00	18 20	.....	2 70	48 45	119 17
Northumberland, E	250	51	2,143	98	36 59	65 15	74 00	9 16	184 90	5 00	38 00	7 95	21 15	7 25	24 27	32 05	135 67	49 23
Northumberland, W	205	66	1,836	97	125 70	50 50	75 00	106 20	357 40	11 25	24 00	8 12	19 90	28 50	83 34	60 86	235 97	121 43
Ontario, N	.....	9	65	6	.....	75	22 00	9 45	32 20	.....	5 00	1 50	4 25	3 00	.....	4 45	18 20	14 00
Ontario, S	178	51	1,127	66	71 10	29 50	56 00	1 05	157 65	2 90	15 00	3 78	6 40	4 86	.....	27 24	60 18	97 47
Oxford, N	216	81	2,006	101	60 99	58 00	58 00	24 85	201 84	6 85	13 00	6 88	15 88	25 60	11 28	48 55	128 04	73 80
Oxford, S	224	78	1,620	92	133 90	61 00	96 00	70	291 60	8 86	76 15	13 35	10 75	39 77	75	14 65	164 28	127 32
Peel	376	118	3,264	215	78 73	89 75	103 00	78 54	350 02	31 91	79 37	20 66	48 25	33 55	11 25	47 47	272 46	77 56
Perth, N	64	39	878	45	26 32	29 50	34 00	18 58	108 40	23 10	22 00	4 55	4 00	8 75	3 30	20 00	85 70	22 70
Perth, S	285	61	2,357	95	48 63	63 00	34 00	15 06	160 69	10 60	21 05	5 08	7 75	.....	2 50	10 51	57 49	103 20

Peterboro', E	70	28	723	22	20	91	17	75	20	00	15	06	73	72	1	50	.....	4	03	3	00	3	75	1	75	17	78	31	81	41	91
Peterboro', N	44	17	307	51	1	88	10	50	3	00	18	10	33	48		15	11	45		68	.....	1	00	.....		75	14	03	19	45
Peterboro', W	43	6	139	6	4	77	6	70	15	75	1	05	28	27	.....		10	00		30	.....	5	00	1	75		90	27	95		32
Prince Edward	333	94	2,616	141	33	48	44	00	52	00	31	65	161	13	17	00	33	20	6	92	6	50	16	55	6	55	12	50	99	22	61	91
Renfrew, N	176	53	512	50	30	66	37	35	50	00	17	78	135	79	2	36	31	50	6	08	9	80	11	50	19	30	14	60	95	14	40	65
Russell	13	5	55	5	.....		3	75	10	00	.....		13	75	12	00	.....			25	.....		.....		.....		.....		12	25	1	50
Simcoe, C	128	90	1,279	128	85	34	37	00	71	00	36	64	229	98	2	50	34	00	9	70	4	70	12	60	46	78	33	48	143	76	86	22
Simcoe, E	41	11	405	15	14	23	6	75	20	00	1	19	42	17	7	00	.....		2	77	6	40	4	25	2	67	11	95	35	04	7	13
Simcoe, S	55	25	749	40	21	11	40	75	10	00			90	72	76	3	50	5	00	2	14	10	25	6	00	6	60	15	18	48	67	24	09
Simcoe, W	171	87	1,481	100	112	70	39	25	78	00	109	74	339	69	34	05	10	00	9	10	15	00	41	20	39	42	91	68	240	45	99	24
Union	179	32	853	53	11	39	43	75	50	50	5	19	110	83	9	10	21	45	4	47	7	25	12	40	19	90	8	60	83	17	27	66
Victoria, E	122	49	1,097	68	25	27	34	25	44	00	2	36	105	88	12	40	12	60	5	21	6	50	13	60	.....		26	31	76	62	29	26
Victoria, W	274	85	2,447	107	50	92	60	75	56	00	4	32	171	99	7	02	21	10	10	78	10	00	21	10	.....		53	10	123	10	48	89
Waterloo, N	218	73	2,483	108	74	95	49	50	73	00	64	50	261	95	25	42	28	53	13	65	6	85	24	00	1	00	40	78	140	23	121	72
Waterloo, S	303	84	4,072	135	58	92	85	00	62	00	140	58	346	50	49	31	62	05	13	47	22	54	14	77	1	49	84	76	248	39	98	11
Welland	320	82	1,604	85	148	16	51	00	97	00	146	82	442	98	9	25	30	96	15	16	10	60	18	85	57	53	131	19	273	54	169	44
Wellington, C	151	80	1,321	102	86	51	38	75	83	00	112	50	320	76	22	00	60	60	11	06	14	50	33	30	12	35	51	57	205	38	115	38
Wellington, E	194	79	1,536	89	56	49	58	75	80	00	69	19	264	43	9	75	18	60	11	90	13	55	41	49	19	86	85	09	200	24	64	19
Wellington, S	142	57	1,280	87	75	17	33	25	68	00	11	11	187	53	12	00	20	50	10	31	7	04	19	25	32	08	19	85	121	03	66	50
Wellington W	103	45	896	46	71	24	28	25	80	00	33	28	212	77	7	25	30	65	4	52	2	25	36	20	2	00	42	08	124	95	87	82
Wentworth, N	255	88	2,513	162	104	64	61	00	91	00	31	32	287	96	20	75	25	00	18	66	10	78	13	80	6	80	57	03	152	82	135	14
Wentworth, S	288	90	2,386	123	63	42	72	50	98	00	66	40	300	32	44	35	23	00	33	10	27	85	33	70	.....		68	22	220	22	80	10
York, E	266	71	2,182	118	100	38	65	75	152	00	59	77	377	90	8	20	33	50	13	63	19	75	35	42	10	69	58	53	179	72	198	18
York, N	198	71	1,708	109	37	64	36	50	103	00			25	177	39	3	75	22	80	6	82	10	50	14	80	3	30	10	75	72	72	104	67
York, W	359	95	3,160	133	53	50	90	30	108	00	46	12	297	92	36	78	46	00	25	50	42	50	16	90	7	23	27	77	202	68	95	24
Northern Districts.																																
Algoma, C	93	38	770	42	106	40	24	50	64	00	62	50	257	40	1	00	23	50	7	95	2	00	.....		30	21	90	58	155	24	102	16
Algoma, N.S	119	37	526	65	32	51	18	00	28	00	34	80	113	31	1	25	8	30	4	90	1	50	3	50	4	32	35	50	59	27	54	04
Kenora	62	34	703	36	43	52	19	00	22	00	24	70	109	22	11	25	11	70	5	05		75	.....			25	4	90	33	90	75	32
Manitoulin, E	86	74	1,102	148	69	62	30	25	34	00	168	90	302	77	7	50	.....		5	84	.....		75		31	16	48	12	93	37	209	40
Manitoulin, W	84	47	568	89	.....		.....		.....		.....		.....		.....		.....		.....		.....		.....		.....		.....		.....		.....	
Parry Sound, E	87	75	840	62	115	59	29	50	24	00	127	78	296	87	4	25	.....		3	99	2	85	.....		17	35	57	27	85	71	211	16
Rainy River, S	93	43	565	25	42	70	22	25	34	00	20	10	119	05	11	00	26	50	3	95	.....		10	50	7	20	27	67	86	82	32	23
St. Joseph Is	58	25	320	23	54	63	17	25	43	00	59	18	174	06		82	20	00	6	85	2	50	4	50	26	21	50	12	111	00	63	06
Temiscamingue	152	56	638	42	116	29	44	75	46	00	85	37	292	41	8	50	10	00	9	98	25	35	.....		5	00	60	20	119	03	173	38
Thunder Bay	125	46	622	68	89	93	30	00	34	00	199	35	353	28	11	60	12	80	7	55	11	80	1	00	16	75	245	13	306	63	46	65
Total	13,841	4,770	119,364	6,832	$ 4,736		$ 3,366		$ 4,694		$ 3,515		$ 16,311		$ 1,027		$ 1,946		$ 682		$ 764		$ 1,209		$ 988		$ 3,197		$ 9,813		$ 6498	

Women's Institutes of Ontario

ANNUAL CONVENTION

The seventh annual Ontario Women's Institute Convention was held in Massey Hall, Ontario Agricultural College, Guelph, December 9 and 10, 1908. The first session opened at 10 o'clock by those in attendance rising and singing the National Anthem, after which the Rev. R. J. M. Glassford, Guelph, led in prayer. The Hon. J. S. Duff, Minister of Agriculture, presided.

ADDRESS OF WELCOME.

By G. C. Creelman, President of Ontario Agricultural College, Guelph.

Mr. Chairman and Ladies,—It is always a privilege and a pleasure for the President of the Ontario Agricultural College to welcome to our grounds, and to our halls, and to our homes, the women from towns and country places throughout the length and breadth of this Province of Ontario. I want you to feel that this is not a formal address of welcome. I want you to feel that we are not a formal people, but that this Institution, the Ontario Agricultural College, with its many departments and the extensive equipment necessary for education and investigation along lines intended for the uplifting of rural life and the building up of a stronger manhood and womanhood throughout the land, are open for inspection and use. The Ontario Agricultural College, if it stands for anything, stands for a better life in the rural communities in the Province of Ontario. We are catering to two hundred thousand farmers, in this agricultural Province. It cannot be expected that all the two hundred thousand farmers look to us for inspiration and help, and it cannot be expected that one Institution is capable of helping all those people. When I go to the back townships, away from those districts that are capable of reaching Guelph through excursions, it gives me pleasure to extend invitations to visit us; and, if any of you at any time have the opportunity of going farther back from your homes than you have been in the habit of going, I would like you to extend this invitation to them and I would like you to ask them, if they cannot organize excursions to come up here, to write us and we will feel that we are then truly doing our best work.

For a long time the Institution grew very slowly, but steadily and surely. I am glad to say that now it has the confidence of the people who know it, and we ask that you come to us and bring to us your friends in the growing seasons, when we think we can help you individually; and we trust that all may go back and take with them such ideas as we have had the privilege to work out through the help we get from a beneficent Government.

When you go back home you will be asked the question as to what you saw,

and it is my privilege to tell you, as briefly as I can, some of the things we are trying to do, some of the functions we are trying to perform. In the first place, we have practically two institutions; we have a school for boys and a school for girls. In the school for boys this year we have students in attendance from twenty-two different countries of the world. May I read them to you and you will get an impression of the extent of the work and the number of people we reach outside of the Province of Ontario: Belgium, East Indies, Germany, Holland, England, Ireland, Scotland, Wales, India, Japan, Jamaica, Mexico, New Zealand, South Africa, Spain, Argentine, and from ten states of the American Union.

There are two view-points from which to consider this statement. Upon first thought, you may say that, if the Ontario Government is supporting an Institution for the different peoples of the world, you do not know whether that is an institution you want to support. In addition to those coming from these countries, the great bulk come from the Province of Ontario, and the counties that are mostly represented are first, the county of York 24; Waterloo 12, Brant and Wentworth, Haldimand and Ontario 10, and the others from ten to two. The point I want to make is this that while nine-tenths of all the students in attendance are Canadians, eight-tenths are Ontario boys, and the other one-tenth, outside of the Province of Ontario, are scattered throughout the globe. We are rather proud of this fact, because the kind of advertising that we have been doing to reach those boys is the very best advertising that can be done for Canada.

If you are asked the question, "Are the professors at the Ontario Agricultural College devoting all their time to the educating of boys in far away places?" I would like you to answer in this way, "The Ontario Agricultural College and Experimental Farm are educating farmers' boys with the hope of returning them to the farm better farmers. In the second place we cannot expect every boy who leaves home to attend the Ontario Agricultural College to go back to the farm. I receive letters in my office every week from young students, who write me for advice, and they say, "I left home with the idea of going back and taking charge of the old place and remaining there all my life, but since I have been away from home, one or two things have happened, either the younger chaps have come on and are able to do my share of the work and I am not needed at home, and I can go into something else that will make me some money," or, what is often the case,—you will appreciate this yourself—the other reason that is frequently given for the boy not wanting to go back is that his father has written to him and said, "When you left home I had rheumatism, or I thought I was getting to be an old man, but I feel younger now and I am not prepared to turn the place over to you, but, if you want to come home and work with me, I can give you a job, but, if anything better turns up in the meantime which will help you to buy a farm, then we would be very glad for you to look out for that position." And so circumstances alter cases, and the boys come to me and say, "How can we fit ourselves to be better citizens of Canada, but usefully engaged along agricultural lines and in a professional way, that will enable us to make more money and settle down and become good men in the interests of Ontario." When you hear of our boys taking positions or when you hear of our men taking charge of city dairies and creameries and cheese factories, you will realize that the Ontario Agricultural College is doing a work indirectly for farms and farmers of the Province of Ontario, that no other institution is capable of doing for this Province.

The student body has crept on until—you will be glad to know—we have 1,170 students in actual attendance at the different classes of the Ontario Agricultural College.

The second part of our work is the work with girls. I ask you now as a favor to those of us in charge and as a compliment to the Minister of Agriculture himself, that you go through our Woman's department from basement to attic, that you do not feel you are asked to do this in a criticizing spirit, because the institution is yours, but because you are our patrons and we your friends, and we want to help you. We ask you to give Macdonald Institute a thorough inspection, and take home a calendar of the Institution. I do not ask you to do this from an advertising spirit. I feel that the Ontario Agricultural College is spending this amount of money, $33,000 every year, for the maintenance of an institution where farmers' daughters may come without a lot of extra clothing, without any different attire from what they are used to wearing at home in their own homes, without any more money than will be necessary for them to spend if they want to go away on a long visit. I want you to know that we have an institution especially for you, where you will learn to do things that you cannot learn to do at home. I can look into your faces and see that you are the pick of the people in your own community. In some ways you have been selected by a number of people to represent them, such as the Honorable Mr. Duff has been selected by people in his constituency to represent him in parliament. You are members of the Woman's Parliament to-day and you are sitting here in session to-day and I will tell you a few things you may do. As members of parliament, I want you to remember that you have founded an institution and it is your duty to keep it up. Can you blame me if town and city girls make application for rooms in Macdonald Hall and make application for entrance to Macdonald Institute classes, when the farmer girls are not there in sufficient large numbers to take up those rooms; can you blame me for letting them come? We think it is good for the city girls to come up and learn by association with farm folks. This Institution is intended for farmers' daughters and the appropriation comes through the Agricultural Department and we are doing work we were not intended to do if we continue to do for the towns and cities the work that we are here to do for the farmers' daughters throughout the length and breadth of this province. There are thousands of young women who would be the better of three months, six months, nine months, or two years at an institution such as we have across the way.

Girls have come to me with fear and trembling, and they say, "I am very timid. I have not been away from home very much and I am very lonesome. I do not know whether it is the atmosphere of Macdonald Institute among girls dressed better than I am, and where everything is so clean and lectures going on and examinations to write, I do not know whether I can stand this thing or not." And I invariably say, "Do not be discouraged, you have had the grit to get ready, you have had the grit to say 'this is the thing I want' and you have had the grit to tear yourself away from home surroundings prepared to take this course. If at the end of two weeks you come with the same spirit and the same story, I will say 'God speed you' and let you go home," and no girl has ever come back; they are made of better stuff. But the point is, that when they get into the atmosphere of the place and find it is not a college where they teach art or music or any of the things that are taught in the city, they are quite satisfied. Macdonald Institute was founded by a great man who, in conjunction with Dr. Mills, the former President of the College, and Dr. James B. Robertson, worked out a curriculum, selected a staff and started work along practical lines, and when the girl comes back in two weeks, she says, "Why this is just home work, it is just dusting and sewing and cooking and washing and it is done so nicely and so systematically and it is done so well that I believe I can learn a whole lot in the

next two months and I am going to press my people to let me stay three months lon'ger."

When I came to this Institution five years ago, I found that in the safe of the President's office there was a check book on a bank in Guelph with a deposit of $1,000 in the bank to my credit. It looked to me that that was pretty nearly found money for me: I went on further in the investigation and discovered by writing to Dr. Mills that the will of the late W. H. Massey, the man who gave us this building, said that a certain number of the Massey-Harris' shares, the interest of which would be sent to the Agricultural College, was to be used to assist worthy boys and girls to get a better understanding of rural conditions, so that when they went home they would be better citizens. I considered this very broad and wrote to Dr. Mills and said, "I have two or three instalments, until now it is $1,000, and I do not know what to do with it." The story is this, that I went carefully through the student body without letting them find out what I was about, to see who were the worthy boys and girls, because we were just starting them. I wanted to find out the students who were borrowing money, either at high rates of interest or from somebody who would want it back too soon, or boys who, by virtue of the fact that the younger boys at home had come along and required an education found less funds available for them. I picked out twenty young men and arranged a private interview with each in my office. I said, "I want to have a confidential chat," and they were quite open with me and told me where they were getting their money, how hard it was in some instances to get it; and then I said, "I want to help you; I have a fund in my possession which will help you and I want to make you a present in the name of W. H. Massey, of fifty dollars apiece, you twenty men taking away $1,000." I want to say that not one man in that whole number would accept the money as a gift and I was nonplussed. These young men said to me individually, for each one had said it in different words but all leading up to the same thing, "We expect to work our way through this school and we do not expect to take money from any one. We realize your position, but you will have to give it to somebody else." I thought this a splendid tribute to the young men in the Province of Ontario. You will be curious to know what I did with the money. I happened upon this scheme. I put up a notice on a bulletin board, "To Whom It May Concern: There has been placed in my hands through the will of the late W. H. Massey, a sum of money to be used for the assistance of worthy boys and girls at this Institution. There must be some young men or women in this school who, by virtue of the fact that circumstances have changed at home or they want to take a longer course, but their money has run out sooner than they expected, require additional ready money. If there be any such in the student body, I would be glad to lend them up to $100.00 on their notes without interest, to be paid back in their own time." I have had 164 applications. The young men and women of Ontario would not accept it as a gift, but they were willing to take the money as a loan; and while that has been going on for five years, we have never lost one cent yet and no note has ever gone over the time when it was due. (Applause).

If you know of any girl who is coming to your Women's Institute and desires to help herself but has not the money to come here, if she will come and make application to me, I will be very glad to lend her enough money to take a three months' course, to be paid back when she sees fit, and, if she does not pay it back there will be no harm done. I want you to feel that every room in Macdonald Hall ought to be filled with farmers' daughters. Why we have them in such large numbers from towns and cities, although there are school buildings in towns and

cities, is because of the agitation for domestic science teaching everywhere. The time to send a girl to the Macdonald Institute is while her time is not worth very much at home.

I ask you as patrons of the Institute to go through the place and consider it as yours, and if you have no daughters of your own to come to the school, that you will do your part to induce girls in your neighborhood to come and benefit by the work we are doing.

REPLY TO ADDRESS OF WELCOME.

Mrs. W. J. Hunter, Brampton.

Mr. Chairman, Fellow-workers and Gentlemen:

I am sure I voice the sentiments of every one present this morning when I say we are very grateful indeed to President Creelman for the kindly welcome he has just extended to us. I am sure that each one of us came expecting this welcome and we are very pleased to have received it.

While we enjoy our Institute work at home throughout the year, I am sure there are not many among us who do not look forward to the additional pleasure, when we may lay aside our household cares for a time and hie away to the city of Guelph to attend our annual Convention and enjoy the helpful things that are always prepared for us here. We all know that the pleasure of any trip depends largely on the welcome awaiting us at the other end and I am sure that after listening to the words of President Creelman, we must all feel quite at home, We come here to learn, to be benefited and to help those whom we have left behind. While I know by experience that it is very pleasant to come up here as a delegate, it is very pleasant to come as a visitor, under no obligation to carry a note book or pencil, but, even if this is so, I feel that every Institute member is under an obligation to her own branch at home to take something back, some new inspiration, some helpful thought, anything, everything that we can gather, that we think will stimulate the work at home. This, I take it, is the main purpose of our gathering at this time. We have come up expecting two profitable days, and I feel sure that when we go away it will be with a feeling that we have not been disappointed, that it has been well worth our while to come. And to those of our friends who are here for the first time, perhaps from some place distant from this splendid Institution, I feel that I must second the words of President Creelman with regard to the invitation. While I am not authorized to extend the invitation to visit the college, we who live near to this Institution and are privileged to come to it often, feel that it would be too bad for any of our sisters who come from the different points of the Province to miss anything that may be seen, and I know that we from the farms feel that it is a deplorable fact that there are not more of our girls at the Institute; it is really our loss, and I hope that as time passes this will be remedied. I am sure that, when you go through the Institute, you will certainly have the desire for your daughters to be here.

To the elder members of the Institute, those who have been in the fray from the beginning, I am sure that the personality of him who gives us this welcome must come like a whiff of old times. We remember the times when we had more difficulty in carrying on the work than we have just now and we sometimes felt a little discouraged, but we remember how occasional visits from Superintendent

Creelman, as he was then, with his cheery presence and encouraging words, helped us over the rough places and gave us renewed courage to go on, feeling that ours was a good cause, and that in a very short time it would be a popular one as well. We rejoice, I am sure, to see President Creelman so ably filling the position he now occupies as President of the Ontario Agricultural College; we wish him long life and success in the work he has in hand. And I think perhaps just here, at the beginning of our Convention, it might be well for us, the rank and file of the Institute, to ask ourselves what these years have brought to us; are we filling any larger or higher or important position than we did before the Institute existed? You know we have had a large number of meetings and we have discussed every topic under the sun I think, everything from the making of a bed, up. I believe we are better housekeepers. I believe we understand more about ventilation, sanitation, hygiene, the various food values that add so much to our physical well being. But is this all? I hope not; because, if it is, I feel we have missed the highest aim in our work. Are we efficient home-makers, are we better wives, are we better sisters, are we better friends than we were before the Institute existed? Meeting as we do from week to week or from month to month, should make us more sympathetic, more liberal towards each other. Why, the very fact that a woman sits opposite to you in the railway train, wearing one of these pins, should be a pathway to our sympathies and a pass-word to our friendship. We should have a sort of Freemasonry in our Institute; we should be like a great woman's fraternity—of course without the secrets, because, if we had them, we could not keep them. Speaking of this pin we wear and the splendid motto on it, what a spirit of loyalty that motto is. I wonder are we any more loyal women because we claim this motto for ourselves. It says "For Home and Country." I wonder if we are any more loyal to our homes. Home first of all, because we all know that every good woman considers the home is paramount; and it does seem, perhaps, as far as women are concerned, it is home first, last and all the way through, because does not loyalty to home spell the whole duty for women. Are we more loyal to our homes? What do we understand by that? Wives, are you more helpful to him whom you stand beside as a help-mate; are we more loving, more tender, more self sacrificing for our children; more necessary to all those with whom we come in contact? This is what I take loyalty to home to mean. If we are more necessary to everyone we know, then we are more useful. Then I think we should be more loyal to our Institute, to our Superintendent, perhaps first of all, because surely he deserves our loyal allegiance.

When there was only the Farmers' Institute, and the Women's Institutes had not been born, if you had asked President Creelman, or Superintendent Creelman, as he was then, about his work—the various districts, the number of meetings, the programmes, the delegates and so on, he would have told you that he had as much work on his hands as any man could look after. And now we find our able superintendent, Mr. Putnam, with the same Institute, only greatly increased and enlarged, and besides, the great family of women to look after—still far harder to manage than the men, so they tell us. Let us give to Mr. Putnam all the help and the sympathy and all the loyal allegiance possible.

Then, let us be more faithful to our particular branch, for that is where our work lies. Let us attend the meetings more regularly and let us help to increase the membership, and, above all, women, do not let us shirk our own responsibility, our own share of the work and when the President comes along and says "Mrs. So and So, will you prepare a paper for next meeting?" do not look shocked and say, "Oh, I cannot speak, I get so nervous." None of us know what we can

do till we try, and while it is always impressed upon us that the main thing necessary, if we are to have a successful branch, is that we have good officers, we know that the most necessary thing is individual faithfulness from each and every member.

Then are we more loyal to our country? "Oh, yes, we are loyal to Canada, the idea of a Canadian being disloyal! We love to see our emblem floating in the breeze." But we are not as demonstrative as we ought to be, and I do admire the spirit of our neighbors on the other side of the line who are so loyal. But is that all that loyalty to our country means? I do not think it is. Don't you know how often when we send up petitions to our Heavenly Father for certain things that we have made necessary those things. If our King and our country are to be blessed, if this great and beautiful land that we call home and that we expect such great things of in future generations is to be the land we want it to be, you and I have our part to play in the matter. We must be loyal women always.

How many were privileged to listen to that paper by Prof. James at the meeting last year? I would like to recall one thing he said. It has been present with me all the year. Future Canada is where? Did he say, in the British Isles, away in the south of Europe? No, he said "Future Canada is rocking in the cradles of our homes." Think of it! This is our share in the making of our country. Your boy grows up, he goes out from the home. What sort of a boy did you teach him to be? Did you teach him to be honest, faithful, upright and true? What is his influence to be among his fellows, for good or for ill? Or perhaps the little daughter playing around your knee grows up and marries and goes west, perhaps to a prairie home. What sort of an atmosphere will she create there, what will be the influence that will emanate from it? Now don't you see our share in the matter. It is most vital I think.

I noticed in one of the Toronto papers a short time ago how a woman's club in that city listened to an address from a gentleman on the subject of bribery and elections, and I must confess I was amused when I read it. Women listening to a talk on that most unsavory subject of bribery; and consider if you will the most important part they play at election times—they haven't even a vote. (Laughter) And the speaker said "If this thing is to be done away with, if we are to overcome this evil, one of the things that must be done is this: the men high up in the ranks, those in the important positions must be taught to play the game fair. Now that is it. Where do you think the seeds of bribery are first sown, is it in the breast of your parliamentary candidate of middle age or his jolly henchmen who gather around him at election time—not by any means, but rather with your little son and mine playing marbles, when we are looking on and do not insist that they play the game fair. Or perhaps our children of older growth are engaged in some game and we see one taking an unfair advantage of another and we do not hasten to tell them how unworthy, how detestable all these things are. Oh yes! if our Institute and our homes and our country are to be what we want them to be we must, every one of us, from the highest to the lowest, the richest and the poorest, from the King on his throne to the very lowest of his subjects, must all learn to play the game fair.

Some few years ago, just after the Women's Institutes were organized in our County, at a joint meeting of the Farmers' and Women's Institutes, I heard one of our Institute officials, a man that I know very well and who I am sure, is held in the very highest esteem by his fellow men, make this statement: "Looking back over the years of my life I believe I owe whatever good is in me in a very great

measure, if not altogether, to the influence of three good women, a loving mother, a good kind sister and a faithful, devoted wife." I thought, what a testimony! I do not suppose there is a woman here that does not stand in one of those relations to some one. What about your influence, how are you using it, what will be the testimony of those with whom you are most intimate? We have heard a great deal of talk about woman's suffrage, although not so much in our land as in the mother land; we hear of the fight our sisters are engaged in there, but I am not here to discuss the rights of women. I would be very sorry to consider it at this stage, but I think that if we as women realize the influence we have and which is ours to use and use it wisely and well, I am not sure that we would have very much need of a vote at election.

Now in closing let me say to the Institute Workers and to the visitors, and perhaps it would not be amiss, to the gentlemen as well, let us see to it that always and ever our influence, whether great or small, is cast on the side of what is right and good and pure and true and let us help each other. We can do a great deal more in this work than we are doing.

In closing I can only say to President Creelman and the kind friends who have welcomed us to this pretty city and those who have so kindly prepared this programme and also to my patient and attentive hearers, thank you. (Applause).

The Chairman:—You will allow me as chairman to say that we certainly have all enjoyed very much the address just given, and I know I voice the sentiment of every one present when I say that it has been an inspiration and a very great pleasure to listen to the reply to the address of welcome just delivered upon the subject.

ONTARIO WOMEN'S INSTITUTES.

By Geo. A. Putnam, Superintendent, Toronto.

It is needless for me to say that I am more than delighted to meet with such a representative body of women from the various districts in which we have Women's Institutes. It would be a very ungrateful man indeed who would not feel from the bottom of his heart the deepest thanks for the kindly assistance which the women are rendering to the Department in the work which is being carried on so successfully. You have heard from Mrs. Hunter that you had struggles in the early days of the Institute; we have a few struggles yet—just a few—but I find my duty during the past years has been more in the nature of directing rather than encouraging the Women's Institutes. The noble women of Ontario have come to appreciate the good to be accomplished through such an organization as the Women's Institute, and, therefore, do not need to be urged to accept their responsibilities, but only to be directed along the most helpful lines. The work is extending greatly in all districts, and is developing much more rapidly. The Department up to the present has fully appreciated the good work which the Women's Institutes are doing in this Province and Mrs. Hunter has placed its high aims before you in a very forceful manner.

One of the speakers expressed sympathy with me in my position as Superintendent having to manage such a large organization of provincial scope. I consider that some of the officers, of the small branches especially, throughout the Province, have more to discourage them and harder work than I, and thus deserve

the greater credit. They have sacrificed a great deal of time to make their own branch a success, and in a majority of cases they have accomplished what they aimed at, as women usually do.

While we appreciate the good to be accomplished from large meetings such as this and are desirous to make the Institute a success in the large centers, our greatest efforts should be devoted to extending the organization into the back districts where the people have limited social and educational advantages. It gives me the greatest encouragement to get a report from the Temiskaming District, Parry Sound, Muskoka, or an Institute in a purely rural section of older Ontario, that five or six women had met together and discussed ways and means whereby they could the better fulfil their mission as mothers, wives, and sisters. Let us encourage the extension of the work to the most remote parts, but not lose sight of the fact that a great work lies before the Institute in the towns and even the cities.

Review of the Year's Work.

Another year of Women's Institute history has been made, and we may well ask ourselves "Has the organization which we represent measured up to the requirements and possibilities of its members?" Whether or not advancement has been satisfactory along all lines, progress is indicated in many instances: in the introduction of the work in new territory, in the increase in membership, in the attendance at the meetings, in the resourcefulness and self-reliance of the officers and members, and in the development of more desirable and helpful features of work, we are able to record advancement.

I have no particular liking for statistics, but knowing that your local Institutes will expect some facts and figures from you, as delegates, regarding the work, I shall now proceed to that rather uninteresting feature of my review. Comparison of mere figures in the work of Institutes does not stand for very much.

The work has extended during the past year to Russell, Carleton, Lanark, East Middlesex and Prince Edward, while new branches in other ridings have been established at some 63 places. The net increase in the number of branches entitled to full recognition from the Department is 71. From a membership of 10,500 in 1906-07 we have increased to considerably over 12,000 for the past year. 581 Institute meetings were addressed by delegates from the Department in 1907, while 1908 shows a record of 784. The total attendance has risen from 71,000 to 94,000. 89 districts with organizations at 465 points are embraced in Ontario Women's Institutes.

This gathering proclaims that the mothers and daughters of the Province have, in large numbers, bound themselves together into one great force, which says, in no unmistakable terms, that, as a company and as individuals, they will do their part to maintain the high moral standard of Ontario homes; to broaden the opportunities for intellectual improvement; to furnish a means for helpful and rational sociability among the women of the land; to disseminate information as to food values and methods of preparation; to provide opportunities for the study and discussion of ways and means in planning for and accomplishing the many routine duties which devolve upon the housekeeper at the least expenditure of time and labor; to make less burdensome the duties which come to the mother as teacher, councillor, nurse, business-manager—the one to whom we all go in time of trouble or need; to do their part to enable their boys and girls, husbands and brothers to get the most out of this life, and to inspire them to accept the respon-

sibilities which are theirs as citizens of this fair country. In short to make home and community life more attractive and elevating.

One might particularize indefinitely in enumerating what may be embraced in our motto, "For Home and Country." A broad interpretation of the objects and aims of our Institutes is indicated in the lines of work which have been taken up by the Institutes throughout the Province. The reports during the past year embrace inexpensive simplicity of meals to the preparation of the feast; the most tempting and nourishing dishes for the invalid to that for the man engaged in heavy physical labor; from an old-fashioned quilting bee to an up-to-date At Home; from the training of the child to the furnishing of mental food for the grown-ups; from the building of a hen-house to the architecture of the expensive residence; from the growing of vegetables and small fruits to the care of house plants; from the readings and songs of the child to those of the professionally trained; patching and darning as well as high-class fancy work; the exhibition of work done by school-girls as well as competitions among adults at the largest fairs; from small meetings with only three or four in attendance to the County Convention with 200 or 300 gathered from all parts of the riding; the visit of a half-dozen members to an adjoining Institute to the picnic of 100 or more. There is something of interest to all in the work of the Women's Institutes, and all may take a part in some feature of the work.

The greatest latitude has been given to the officers and members, with the result that the work done has been such as appeals to the members of the particular organization concerned. This flexibility and the adaptation of the Institute to the people, rather than an attempt to map out definite work and ask the Institute to comply therewith, has given them a hold upon the people of all classes, which insures their permanency. The good which has already been done, both for the individual and for the community, is attracting public attention. An increased sociability and neighbourliness is in evidence. More good literature is available. A general tidiness and attractiveness about the homes, more flowers and shrubs, vegetables and small fruits, is in evidence. Improved water supply, and methods of disposing of waste about the house. All these and much more testify to the results of the meetings held, and the literature circulated by and through the Women's Institutes. Members of Parliament, Public School Inspectors, leading farmers, prominent teachers, Ministers, and in fact all classes are beginning to ask what the Institutes have in view.

While we believe it well to allow the greatest latitude to the Institutes in their work, we are convinced that the time is coming when they should, as one body, undertake some more definite lines of work in addition to the particular work which the local officers consider best suited to the capabilities and desires of the people particularly concerned. There are certain large questions in which the majority of the Institutes can render assistance to their sister organizations both by way of collecting information and disseminating the same.

If our organization is to be of permanent value we must engage in useful activity, which some one has well said consists in feeding people, then in dressing people, then in housing people, and last in rightly pleasing people. So you see we come back to the old question of "foods," and this must form an important feature in Women's Institute work as well as in the teachings of Domestic Science Schools. While it is well for us to continue to give due prominence to the choice of foods and the nutritive value of the same, we must not forget that in the feeding of people, one of the most important problems of this age is the performance of the physical labor in connection therewith, and I believe that the Women's Insti-

tutes cannot do a better service to the housewives of the country than to gather information through the Institutes, and from other sources as to ways and means of lightening labor and simplifying methods. I will not attempt to enlarge upon this for one of our chief addresses is to be upon this topic, and the valuable information which we are sure to receive from Miss Van Rensselaer will, if supplemented by the practical experience of the efficient housekeepers of Ontario, form material which will be of great service to the members of our Women's Institutes.

There is another feature of the "food problem," in which many of the members of the Women's Institutes might well take an active interest. You have all heard more or less of co-operation among the producers of fruit. In a word this co-operation has resulted in a much larger production of fruit on the part of the members of the co-operative Associations, and, secondly, in the establishment of permanent markets which practically ensure reasonable profits from year to year. It has been found very difficult, however, to organize and continue these Societies, and we believe that if the Women's Institutes took an interest in this matter of co-operation it could well be extended to many other lines such as dairy products, poultry, canning and preserving of fruits, jellies, etc. Most of you may not be aware that thousands upon thousands of barrels of good fall apples as well as a great quantity of winter apples go to waste from year to year, while the residents of the cities and larger towns find it very difficult to get even a medium quality of fruit at a reasonable price. It is quite true that the individual farmer often delivers his fruit to the cities, and in the price received is not even well paid for the labor and expense of gathering, packing and marketing. This could be largely overcome, however, if the farmers of each district would co-operate in the packing and marketing of the fruit. Then again the margin between what the average farmer in the Province receives for his products, and the price paid by the consumer is altogether too great, and the only cure for this state of affairs is in an intelligent co-operation on the part of the farmers. This does not mean that the consumer would have to pay more, but that the farmer would get his just proportion of the margin which now exists between the price paid to the producer, and the price paid by the consumer. We believe that if the women on the farms would take this matter up in an intelligent way that they could exert a very helpful influence in bringing about the desired end.

The time is at hand in Ontario when the matter of water supply is demanding the attention of the farmers. If living in the country is to be made as attractive as it should be, then a proper water supply, which will lessen the labor of the housewife, and enable one to install modern conveniences, is essential. Then again a proper disposal of the waste about the farm homestead may be accomplished at little cost, and it would ensure the health of the family.

You all know, of course, from reading the programme of our Convention that the "milk question" is considered one of the most important before the people of Ontario. It is demanding the attention of the city resident, and must receive the study and attention of the producer if he hopes to meet the requirements which will be demanded in the near future by the purchasers of milk, butter and cheese.

These are a few of the larger problems which we believe the Women's Institute can well take up. We do not wish to leave the impression that the lines of work which have already been followed and established must be given up, but that they may be supplemented by some of what we consider very important questions.

While it is impossible to rehearse all lines of new work which has been undertaken by the Institutes during the past year, there are a few outstanding features which we think it well to make mention of.

County Conventions have been held in Grey, Northumberland, Elgin, Waterloo and combined picnics and conventions in York and Victoria Counties. We cannot too strongly urge the extending of this feature of Institute work. It affords an opportunity for those who are working in the same section of the Province to consult together as to ways and means for extending the organization, also for interchanging of programmes and to receive and give suggestions regarding details of the work. For the most part, local talent should be used at these conventions. All the delegates at such gatherings are deeply interested in the reports given by representatives of the various branches.

Exhibition Days in connection with the Institute will, we believe, prove a very interesting and helpful part of the work. The young girls can be interested in this. By asking the girls under say 18 years of age to bring samples of their cooking and to state the methods employed in their work, a keen competition can be usually secured and when you get the girls interested in this way, they will likely, as the years pass, take a broader and deeper interest in the regular work of the organization.

It is gratifying to know that many institutes have determined to establish libraries and are adopting such means whereby the necessary funds can be secured.

The women of Ontario have large and generous hearts. We hear from many localities that the members have stepped into motherless homes and given assistance to the needy and encouragement to the disheartened.

Health problems are receiving more and more prominence, especially from the preventive standpoint. Tuberculosis and other infectious and contagious diseases are coming to be thoroughly understood and preventive measures adopted. Fresh air and sunshine are coming to be more and more appreciated.

It occasionally occurs that the persons announced to give addresses or read papers, fail to appear on the day of meeting, and the resourcefulness of the members is usually shown in the discussion of some topic of general interest and these topics are not always of a serious nature. You will be surprised to learn that one of our leading institutes recently decided that Monday was not the best day for washing, while another institute concluded the meeting by each member telling a joke. One lady demonstrated the harnessing and unharnessing of a horse for the benefit of the members.

Effectiveness in our organization can only arise out of activity and development. The soil that is capable of producing the largest crop, and is the most easily prepared for further production, is that which has been the most thoroughly tilled, and has been asked to produce the highest yield. Use increases effectiveness. The more the individual gives to the Institute, the more she has to offer. The more assistance you give others, the more strength you have for further service. If you wish a society to live, you must give it something to do. No organization which depends upon amusement, and amusement only, can advance and grow for any length of time.

We are looking to the societies which have done the best work to give us the greatest assistance. It behooves the officers and members of our Institutes to induce and encourage personal effort. While the whole membership benefits from the preparation of an article by one of the local members, the person who prepares the address or paper derives the greatest benefit. The individual and the society must be self-reliant so far as possible. It is essential, however, if the individual is to render the greatest service to the Institute, that she have available the results of observation and study on the part of those who have time to devote to scientific investigation and its application to practical work. It is only when we have a

proper blending of scientific principles and practical work that we will reach the greatest efficiency. You should take full advantage of the assistance which the Macdonald Institute is prepared to render you and about which Mrs. Watson will tell you. At the same time do not fail to get the practical woman who is known as a success in some feature of home-making, to give the results of her experiences in her own way.

The Women's Institutes of Ontario are developing in the home-makers of the Province a deeper sense of their importance in the community, and the establishment of higher ideals in life; and the development of these qualities is helping them to more successfully accept the responsibilities and enjoy the privileges which come to them as members of a family and community, and it is to be hoped that you and I will do as well, as heartily and as faithfully, the task which remains in building upon the foundation which has been so well laid by the noble band of Institute officers and members during the early years of the existence of our society. All honor is due to those who have accepted responsibility in the establishment of the Institutes, and who continued to support, often in the face of criticism and discouragement, an organization in which they saw possibilities for such noble and lasting work. While ability, self-sacrifice, a sympathetic spirit and aggressiveness was demanded of those who were pioneers in this work, those who now hold positions of trust in connection with the Institutes have responsibilities just as great, and opportunities just as promising; and these call forth the best we have to offer in ability, resourcefulness, sympathy, time and energy.

At the request of the Hon. Mr. Duff, Mr. Putnam took the chair.

INSTITUTE FINANCES.

THE CHAIRMAN: The next item on the programme is the consideration of financing the Institutes. It is needless for me to say that this is a very vexed problem and one that causes a great deal of anxiety on the part of the officers.

We have in your reports to the Department evidence of a good deal of originality and effort in many of the Institutes in raising funds. I do not know that the Women's Institutes should look for greater assistance from the Department of Agriculture. When you require more money to carry on work which you consider necessary to the success of your Institutes you usually find a means of raising it; and I will take the liberty of asking a few representatives to tell us what they have done in their respective localities towards raising funds. Some of our Institutes in the vicinity of the Soo and the other side of Port Arthur have shown great aggressiveness, not only in furnishing profitable programmes but in raising money for their Institutes.

MRS. DINSMORE, TARENTORUS: Outside of our usual fees and the grant of the Government, we have had a social once a year, and every fall we give through our Agricultural Society a prize for the best fruits and vegetables. We have a competition for Women's Institute members and donated prizes to the amount of $15.00.

MRS. B. SPRINGER, NELSON: We gave a concert and raised $25.00 at one time and our membership fees amounted up to considerable; so we are not wanting for funds. We made use of some of our money and bought an organ for the Town Hall. We were interested in that because we used the Hall. There was a fire in

the neighborhood, the unfortunate family belonging to the Institute; so we used what funds we could spare to help them.

Mrs. Hastings, Exeter: We have sales of work which is done by the members of the Institute and we have socials and bazaars and sell all kinds of cooking, thus keeping our finances in a healthy condition always.

Mrs. George Brown, Tweed: I might say that in Tweed we have an annual At Home and raise quite a lot of money. It is looked forward to with pleasant anticipation every year. We give refreshments and a good entertainment and charge 25 cents apiece; so that we always have plenty of funds on hand. We gave $35.00 last year to the Public Library. This year we have not paid out very much money. The only money paid out was $5.00 as a prize at the fair, for home cooking. We had three kinds of cake on the list and three kinds of pie and the competition was open to paid-up Institute members.

Mrs. Moyle, Burlington: We bought a piano for use at our meetings and it cost us $175.00. We have the free use of our public library and reading room and so if there is any entertainment in the interests of the library they have the use of the piano free, but outside of that we rent it for $3.00 to churches and for any outside interest we charge $5.00, and in that way we make a small sum of money. Then we have flower competitions. We give our seeds to the school children and arrange for a competition to see who will bring in the best box of flowers, for which prizes are given.

Miss Owens, Duntroon: We always raise some funds each year by a social.

Mrs. McLaughlin, Erin: We have not found much necessity for additional funds as we have a membership of 65, but we had a supper and concert and in that way raised $35.00. We make it a point of having all local talent (Institute members) for the concert. We also had a picnic through the summer, but we did not gain anything from that, so far as funds are concerned, but we gained a few new members. We hold a social evening once every winter for the members.

Mr. Putnam: We hope to see the day when the Men's Institutes and the Women's Institutes will join forces for occasional debate, concerts, and social evenings. We believe Farmers' Institutes are bound, as the years pass, to more nearly approach the methods used in the Women's work. We believe the farmers will never get the most good out of the literature sent out by the Department and the articles in the local papers until they come together once or twice a month for the purpose of discussing the application of underlying principles to local conditions, and exchanging results of practical experiences; and we trust the Women's Institutes will do all they can to encourage the formation of such organizations. In some few localities it has been practiced and has been mutually beneficial both to the Farmers' Institute and the Women's Institute.

AFTERNOON SESSION.—WEDNESDAY, DECEMBER 9, 1908.

Miss M. Yates, Guelph, Presiding.

In opening the meeting Miss Yates said:

I would like to draw your attention to what seems to me to be almost a note of warning to us this morning in our Superintendent's remarks; he spoke of the danger of trying to go ahead too quickly. It was my privilege to be present at the Farmer's Institute Annual Meeting last fall at the Toronto Exhibition and it was

a great source of delight to me to hear one man after another tell of the wonderful enthusiasm of the Women's Institutes in the Province. They stated that they had something to learn from the way we were managing our Institute work.

It is said that faith is the mother of patience. We have faith in the future of the work, therefore let us try to be patient to some extent and not go ahead faster than we can make good the ground beneath our feet.

It seems to me that perhaps you might be interested, knowing I am an English woman, to know whether there is anything of this kind, Institute work, going on in the Old Country. To the best of my knowlege there is nothing that corresponds to this work. I have had the privilege of doing work for the Government in England, to deal with my professional subject, which is poultry, but I never was engaged by the Government of the Old Country to deal with matters for the uplifting of home life and the development of character generally. It seems to me that the people here are privileged beyond the dwellers in the Old Country and the possibilities of this work seem to me to be almost endless in their far-reaching scope.

I am asked frequently as to what strikes me as different in the conditions pertaining to country life here and in the Old Country. I would like to tell you first what has struck me very forcibly here, and that is, the Canadian's hatred of ignorance. Our work in this Institute is very largely educational, and it is an astonishing thing to me to go from one district to another and from one branch to another, from one women's meeting to another, and find almost invariably that the greatest term of contempt that one can apply to another is "Oh, they are so ignorant." In the Old Country we attach a great deal of importance to the development of character and we think education is missing its true aim if character is not developed. I wonder if we are beginning to attach too much importance to it and losing sight of the others.

Are we missing a little of the value of home training rather than education as understood with the training we receive in the schools and colleges in this Province? It has grieved me very much to be confided in by parents and guardians as to the condition of the young people growing up in the homes. There has been distress in many homes caused by the attitude of the young people. They are self-confident and pert and rather inclined in some cases to take a snubbing attitude towards their parents. Two parallel lines will never meet, it might almost be said that two generations run on parallel lines. What does it matter if the parents are not familiar with strings of Latin names or science or mathematics? What does it matter if they do not know these things, if they strike the right note of dignity and self-respect within the homes?

I brought with me the book I am reading. It is "Nature Study and Life" by Hodge. He is one of the brilliant scientists and he has distinguished himself in public research work. He was raised in a country home where his father was a plain ordinary man without education as we understand it to-day, and yet the scientist shows no disposition to snub the character of this man. Let me read you this dedication.

"To Nelson Wellington Hodge, my father, who gave me my first animals and pets, my first garden plot and little farm, who left the big oak uncut for its beauty and the wild prairie unplowed for its wild flowers, who set the elm tree by the porch and the red moss rose in the old home garden."

What did it matter that that man was unfamiliar with the Latin names for the different trees and flowers? What did it matter if his education was defective, so long as he was able to strike that note of self-respect and of dignity and love of beauty and love of order. If the atmosphere of the home is all right, if the home

training along these lines is all right, it does not matter if the parents are educated along totally different lines, if the character is all right.

When we come to consider education along other lines, we are asked to make suggestions. It occured to me this morning when one of the speakers said she supposed every woman in the room would stand in a certain relationship, one or the other to some man, as wife, mother or sister. I think I stand in no one of those relationships to any man, and yet can you bear to hear me speak to you at all. Will she not be persuaded to include with that the relationship of friend. Sometimes it has given me very much pleasure to be asked by the mothers, sisters, or wives of the men and boys of this Province to give some suggestion with regard to their education and development. Perhaps you may be willing to allow one in the position of a friend to be included and on that basis I take my stand before you. I have the very warmest feelings of respect and friendship for many of those friends you are doing so much for through the Institute work in this Province.

Is it not a wonderful thing that the education and the development and the upraising of the women of the Province to a very large extent has been taken in hand by the initiative of the men of the Province? Is not it wonderful that they are wanting better educated, more highly refined conditions in their home life?

I want to mention co-operation. We were asked by our Superintendent to consider co-operation for economic success. That is a subject which is very dear to my heart, knowing what the women in some other countries have done along this line. I would like to add my plea to that of the Superintendent that you give some consideration to this; some consideration to the marketing of the butter, fruits, poultry and so on. When you come to investigate where they have co-operated in this country, you will find an extraordinary development of the code of honor. In Denmark it is said that petty trickery has been stamped out. A woman will not market bad butter for fear of condemning the whole community. It is no longer considered the best policy to try to get high prices for low quality. Think what it would be if the women of this Province could advance to such an extent that the boys and girls were reared in homes where co-operative principles were practiced; if they could stamp out this trickery; if they could do something to raise the morality of the community; if we could only uplift it to some extent by our co-operation. It seems to me to be a great future for the women of this Province, it seems to have a wonderful scope, that it can affect both them in their economic position and the young people they are raising around them.

We have a wonderful programme before us. We are hoping to hear from fifteen of the Districts that have developed the Institute work along exceptionally good lines. It ought to be quite an education to hear what some of the women are doing.

REPORTS FROM INSTITUTES.

North Brant—Mrs. Patten, St. George.

This Institute has had a very successful year. Meetings have been held every month with the exception of August.

Carefully prepared papers have been given on the following subjects: "Production, Care and Uses of Milk," "Duties of Guests to the Hostess," "Cultivation of Roses," "Infectious Diseases," "Pickles," "Apples, Different Ways of Preparing them," each lady giving her best receipe; "The Value of Cheerfulness versus

Worry and the Evils of Fault-finding," "Vegetables, Different Ways of Preparing Them," "Christmas," the young ladies exhibiting their home-made gifts, and "Hot Supper Dishes."

Practical demonstrations were given in dressmaking, and one by the young ladies on salads and light tea biscuits, also one on fancy work.

A special feature is the Question Box, which has been found very helpful in bringing out many discussions upon a variety of subjects, and in showing different methods of doing every-day house work.

Meetings are well attended, interest increasing and new members are added monthly.

East Elgin—Mrs. M. E. Lyons, Aylmer.

We feel inclined to speak at this convention of our failures, rather than boast of our successes, in East Elgin district.

Our defeat has been in endeavoring to persuade two branches to continue the work begun in their respective localities which were all that could be desired. Finally we discovered where the difficulty was.

The leaders weren't of the proper caliber to push initial work. Very much depends upon who are at the head of the movement; also the newer branches take considerable time to get past the initiation, such as demonstrating in cooking, etc. Consequently, between the first and second act the branch dies a natural death.

We have appreciated the demonstrators in domestic science sent to us from the Department, but such instruction can be given by local members. Each district could provide a demonstrator, but not a speaker relative to the movement in Institute work.

Regarding our successful work in East Elgin we have six very enthusiastic branches. From the monthly reports I receive from each branch of the increased membership and the varied programmes, our conclusions are that they are the banner branches of the Province of Ontario.

Our local convention held in August last was very profitable, also an inspiration.

Each branch conducts its meetings differently. One branch pleasantly surprised another branch by inviting them to take charge of their next meeting, of course to furnish all the programme. Refreshments followed, prepared by the girls. This cultivates renewed interest and there is an incentive to do the best one can when away from home.

Recently a branch held a bazaar, in connection with its regular meeting. The members furnished the articles sold, which added to their treasury about $7.00.

Another branch gave a musical and literary entertainment which not only increased the interest of the girls in the capacity of Institute work, but with the small fee, increased their treasury also.

There were prizes given at our County Fair for the best display of domestic products by any Women's Institute. One offered a prize for the best five-piece lunch for a working man.

We have thought it prudent to ask each branch in our district to secure a local speaker to give an address on "Ethics of the Household," as this subject has been somewhat overlooked.

West Simcoe—Miss A. Ovens, Duntroon.

We have eight branches in West Simcoe, all in good working order. They all hold monthly meetings, with the exception of one or two branches who think it advisable to drop their meetings for the summer months.

Most of our branches prepare a programme for the year and they find it much more satisfactory than selecting a subject from month to month. Some of our branches raise a considerable sum of money by concerts and box socials. One branch was able to start a library in that way and some others raise funds in that way so that they may be able to send one, or sometimes two delegates to this convention.

I was told by one of our members that they sent a delegate who never took much interest in Institute work and after attending this convention she has been one of the best Institute workers.

We have not organized any new branches this year, but our membership is larger now than it was at the end of our last Institute year.

East Northumberland—Mrs. H. J. Scripture

This Institute was organized by Mr. Creelman in 1902 at an orchard meeting. It was with difficulty that a president could be secured; while the women were perfectly capable, yet they were too timid to undertake the duties of the office.

The work began to grow until now we have four branches with a membership of nearly two hundred, and steadily increasing. The first work undertaken was that in which every housewife is especially interested. After these years of interchange of ideas, comparison of methods, question drawer, etc., that these meetings afford, we find our women doing the work of their homes—cooking, cleaning, canning, pickling, gardening, poultry raising, dairywork, etc.—after the best methods that could be devised by these bright, clear-headed women, supplemented by the information given by the lecturers sent to us by the Department, and also by the very helpful literature that reaches us from time to time from the Department.

We find women growing stronger from helping with the cultivation of their own vegetables and raising their own poultry in the fresh air and sunshine; and what a satisfaction to a thrifty house-wife to have her cellar well stocked with fruit and vegetables, as well as beef and chicken of her own raising. This is in a great measure doing away with the old pork barrel or an extra trip to town for the summer supply of meat.

And as a last aid came the idea of the haystove; when formerly the conscientious, faithful house-wife would not go out for a whole afternoon, for the tired busy man must have a good hot supper, now, thanks to the haystove, a good hot supper can be ready at a moment's notice, and with the household machinery running smoothly and pleasantly, the mother sees more in her house than a mere house. She sees a home and influence emanating therefrom, and she sees that a right home with right influence can only come from united efforts by all members of the household. Thus the training of her family goes on, developing the best that is in them, which is, after all, nation building or working for country. And while training her family she becomes interested in her life outside the home, and soon becomes an active worker in all moral reforms.

And now to sum up the Institute work for women, we find them enjoying the companionship of congenial acquaintances, whom they probably would never have known but for Institute meetings. We find their homes attractive and well man-

aged and the women themselves, from their training in Institute work, developing ability for facing and solving the varied problems of life.

Now in conclusion, when we find Institutes advocating the simpler life as many of the home magazines are, and the women instead of living the strenuous life, that they are living in many cases, living more independently, and instead of striving to arrange their homes and the work of their homes in imitation of the very wealthy with large incomes and many maids, making their wants more in harmony with their actual needs and means and strength; they will begin a new era for women—happier, healthier conditions.

West Victoria—Mrs. F. Webster, Cambray.

This district comprises six townships, namely: Ops, Mariposa, Eldon, Carden, Dalton, and Digby. The three former are second to none in Ontario in agricultural resources, while the latter three are not as good or suitable for general agriculture, but there is plenty of room for some Institute work. In these six townships, we have as yet only six branches, although we are living in hopes of organizing more during the winter months. Lindsay branch, with twenty-six paid members, is doing its own good work. Our district secretary has had the opportunity of visiting it at a regular meeting, and reports the work progressing. Each meeting has something new and instructive, and we feel safe in saying, that with their president, Mrs. Milne, and Mrs. Crandel as secretary, we may rest assured that all is well with this branch.

It was our privilege to visit the Little Britain branch at their last meeting. This was the most instructive meeting I have yet attended. There were two papers of cheerfulness. A demonstration of candy making was conducted by three of the ladies of that place. Really it was a revelation the way these ladies handled their subject; I could not compliment them too highly. This is a branch that has taken new life since the last election of officers. It has a membership of twenty-five, and an attendance of about thirty, where it had before an attendance of five. Every member came to take all the information away with her that she could, and I would say the same in regard to giving.

Linden Valley reports thirty-seven paid members. I had the pleasure of visiting this branch at its last meeting. This seemed to be a day devoted to the study of literature, as the Life and Works of Longfellow were chiefly under consideration.

This branch also studies housekeeping and homemaking in its many phases. These ladies are readers of the Home Journal, and have secured a club of subscribers, for which they receive several of the premium books.

Oakwood branch is also in splendid shape, having thirty-eight members in good standing. This branch also does a good deal in the literary way of entertaining and studying. Some of its members are efficient teachers in many lines of work, while some are born elocutionists, and I am looking forward to my visit to this branch with a view of gaining new inspiration and courage to help me in my work.

Cambray has thirty-four paid members and several more whose names are still on the books, but who have grown careless in the payment of their dues.

Islay branch, with only eighteen members, has an efficient set of officers who seem to have a way of getting right after business. They send a business-like report to our secretary after each meeting.

These six branches, with a total membership of one hundred and seventy-six, all hold regular monthly meetings. Three of these have printed programmes for

one year, and three of them have a social evening once in three months or six months. At these social evenings, the husband, brother or the gentleman friend is invited to come along and all join in a real good programme. A dainty but limited luncheon is provided by the ladies.

South Waterloo—Mrs. W. Elliott, Galt.

We have in our district seven branches, all wide awake, splendid branches, and a prospect of organizing two more in the near future. Our membership is over three hundred this year. We work as a unit, so far as our programme and year's work is concerned.

Early in May the District Board of Directors meets, composed of a representative from each branch, two representatives from the district, and the district officers, and draft a programme for the year, choosing such subjects as are deemed most helpful to the different branches; on the last page the names of the branches, and their officers, with day of meeting, is printed, then a space left for the secretary of each branch to sign her name before giving this programme ticket to each of her members. We have followed this method for two years and it gives the best of satisfaction.

Our annual meeting is looked forward to as a gala day for our members, their sisters, cousins and aunts. In conjunction with the Farmer's Institute we select a place of meeting, arrange our programme, time, etc., and have a picnic together. After the business has been disposed of, the programme is listened to with great interest, luncheon is served and a jolly social hour spent together. This method meets with the approval of all. The gathering is called for 1:30 and by 7 o'clock every person is on his or her way home.

Another most pleasing feature of our institute work is our Annual Convention. Our second convention was held in conjunction with North Waterloo Women's Institute in Hawkesville, on October 14th. The morning session was very largely attended, over two hundred women being present—one of the most enthusiastic and inspiring gatherings of women we ever witnessed. We doubt if another organized body of women could call forth such a morning gathering in so remote a place. At noon, lunch was served. The afternoon session commenced at 1:30 with the hall filled with an eager, expectant audience and it was not disappointed. The programme was a most excellent one, each number being worthy of reproduction. It spoke well for the ability of the women of Waterloo for, with one exception, it was carried out by home women.

The finances are the only draw-back to maturing our plans. When the discussion was opened, "Shall we make our convention annual?" it was almost unanimously voted to do so, only the more careful ones suggested that we might become bankrupt. Perhaps as we branch out in this extra work, the Department at Toronto may see its way clear to add to our already liberal grants a Convention Fund, which will, I am sure, be most acceptable and most judiciously spent.

In the winter months we hold a few meetings in conjunction with the Farmers' Institute, at which we are kindly given extra help by the Department. These meetings prove very helpful to our Institute and in helping ourselves we are also helping the Farmers' Institute.

Dufferin—Miss Jennie Hall, Shelburne.

We are loyal to Institute work. There are nine branches holding good monthly meetings and the county is not yet all organized. When the Institute was first started we were looked upon with disfavor, but that has nearly all disappeared, as the people have seen the result of our meetings and they come and enjoy themselves. We have all the usual subjects.

In Institutes where the members are fearful about reading a paper, we try the debating line and we have lively discussions. We would do better in our home branch if we had not such severe critics, but I suppose every branch has them to contend with.

Our branch finds it a great help to have a social every winter. But why should we not prosper or have interesting meetings when we have for consideration the subject "Home?" Why, everybody has to do with the home and, therefore, should be interested.

West Bruce—Mrs. Jas. Cameron.

The management of the West Bruce Exhibition allowed the Women's Institute to have a table and give prizes for a special Women's Institute Exhibit.

The committee appointed were all new to the work, but were successful, so much so, that the directors of the fair said the exhibit was a great drawing feature. The prizes were given for two lots of three varieties each. Lot (1) to consist of plain sponge cake, gems and cookies. Lot (2), three varieties of candy. Conditions. (1). Each exhibitor must be a member of the Women's Institute. (2). Each exhibit must be accompanied by the recipe. Three prizes were given for each class: 1st, 75 cents; 2nd, 65 cents; 3rd, 50 cents. It was not necessary to be a member of the West Bruce Fair. The district president was chosen as judge.

The table was placed near the Fancy Work and Fine Arts, attractively decorated with draperies and potted ferns, also crepe paper in blue and white Holland scenes. The cake and candy made a very pretty exhibit, claiming the attention of continuous crowds all day. Some members of the Institute were present all of the time to explain, and to try to interest all in Institute work. Many copied the recipes. This selection of articles was made because not already included in the regular prize-list. It is a question in our society, whether a man or a woman is the better amateur judge of cooking.

In our programme for the coming year we are to discuss household bookkeeping and financing households. We believe that when we housekeepers can successfully keep books and handle a fixed sum periodically, sufficient to meet legitimate expenses, that we may be considered fit to vote, and to many of us the household is a much tenderer subject than voting. Let us agitate the house allowance and get the men of the homes educated to it as well.

South Grey.

In our district of South Grey we have 180 members. There were two new branches started Institute work this year, namely: Ayton and Robb. Twelve members from South Grey attended the convention at Chatsworth and had a very pleasant and profitable time. One thing we found very interesting at our home meetings, was a competition in darning, a prize being given for the neatest work. The judges were uninterested parties. Buttonhole making is another very good accomplishment for girls, hemming and knitting. I think every farmer's daughter,

or, for that matter, any girl should learn how to knit and sew. If they would spend as much time learning this as they do on fancy work they would be able to make, mend and knit their own clothing and when they went into homes of their own they would be able to knit their husband's and children's mits and socks or stockings.

Haldimand—Mrs. Thompson.

Three minutes is a very short time to tell about Haldimand. We have fourteen branches with a membership of 420. Meetings have been held regularly through the year. We had two picnics held on the lake shore which were largely attended, and interesting addresses were given on Institute work. One feature of the work is visiting among the neighboring branches, the visiting branch always providing the programme. In Haldimand we have bad roads. In speaking with a member of the County Council he said it was as much as his position was worth to talk up good roads, because those who did were invariably left at home at the next election, and here was a chance for the women who were not looking for funds to do some talking on the subject, and we had the subject brought up at an Institute meeting with the result that something has been done to improve the roads.

I would like to say something about the work done by our banner branch which has a membership of sixty, and has an average attendance of forty-four at the monthly meeting. I want to mention this branch because they have overcome two difficulties which are often brought forward against Women's Institutes. One is that in small towns where there are so many churches it is impossible to have a Women's Institute. This branch is situated in a large town where there are a large number of small churches. There are also clubs and fraternity societies. They meet together and have social times on an equal footing and for that reason they keep up their interest in the Women's Institute. One woman told me she had no idea the women were just as interesting in other churches as they were in her own.

Another difficulty this branch has overcome is in working the town and country together. They have admirably overcome this. When the meetings are held in the country, as they often are, because they have larger houses, they send in conveyances, and they have notices posted up to say that teams will be in a central place to take the ladies to the country, and in this way a large attendance is always assured. To have the social part of the meetings a success, they have a lunch. Five of the members are asked to provide the lunch. A member has to assist in preparing the lunch only once a year where there is a large membership.

South Oxford—Mrs. James Wood.

We have a district with nine branches, but we have been able to visit only three officially. At one of the meetings we brought up the discussion of character building and one thing we spoke of was the objectionable advertising in our periodicals. We want to see if we cannot do something along that line to induce our editors not to put things in the papers for our young people to read which are not fit for them to read. Also to do something to prohibit the profuse and careless distribution of pamphlets on patent medicine. Young children pick these up and read them. There are things in them that we think should not be before the eyes of the young children, and we would like to start something against that.

PRINCE EDWARD—MRS. MCGILLIVRAY.

We were only organized in January, but we have seven flourishing branches and we have nearly 300 members. All the branches are doing good work. I might say that in our monthly meetings, if there are those who do not care to give a paper, we ask them to give a voluntary talk. They may have some subject which they could talk on that we know nothing about, so that generally our meetings are very interesting and instructive. We had a union picnic last summer with about 300 in attendance and they are all looking forward to next year's picnic.

WEST YORK—MISS DUNCAN.

During last year we organized five branches in our district. One was organized last May. It has over forty members now and is in a small place with very few houses in a country district. Another one of our branches has over 100 members and our newest Institute of West Toronto has over eighty members. We have social meetings when the public is invited to join with the members. Until last year the officers of the first Institute formed in the district acted as a district executive, but since that we have had separate officers, and I think the branches are taking much more interest in the work. Seven of them have printed programmes and I can say that these seven are doing the best work. Very few fail to keep announcements made on the printed programmes. We have a varied programme, many of the subjects have been mentioned by the other ladies. One programme we have has a space after each meeting for remarks on the meeting. I think that is a very good idea, and the ladies are requested to bring their programmes with them to the meetings and make notes for future reference. Last July we held a picnic of the three districts in our county and have decided to make it an annual event.

THE CHAIRMAN: We will now have a vocal solo by Miss Gardner of Kemble, Ont. Grey County is the pioneer County of Women's Institutes and this lady who is to sing is the daughter of the pioneer organizer for that section.

PROBLEMS OF THE PEOPLE.

BY C. C. JAMES, DEPUTY MINISTER OF AGRICULTURE.

Madam Chairman and Ladies:

It ought to be an inspiration to any man to come and attend a gathering of this kind. The only question that may arise perhaps is as to how we men get in here. I remember when at school having a recitation, which, in my youthful days, I was accustomed to give from the public platform at times. "Is there any old fellow got mixed with the boys, if there is, put him out without making a noise." But you are kind enough not to put us out. Some have come from a sense of duty and some from curiosity; as for myself I have come here for pleasure and profit.

There is no gathering connected with our agricultural work that affords so much promise or that should inspire one to work so much as these gatherings of women representatives of our agricultural communities and of our towns and villages. While one of the ladies was telling you about how they gather together and have competitions in darning for which a modest prize was offered, I was won-

dering whether you people of the country or the people of the city are not after all doing the better thing. In Toronto I am told the ladies gather together and play bridge for a prize. Of course I do not know anything about such things, we are not allowed in on such occasions. I think you have the advantage, because, I have been told that silence is an absolute necessity under those conditions, while in the competition of darning half the pleasure would be robbed unless you ladies were allowed to talk over your knitting.

In the early days Benjamin Franklin was carrying on some experiment. He was flying a kite, not in the modern slang meaning of those words, but in the good old-fashioned boyhood way of flying a kite, and it went up and up into the clouds until finally the electricity of the clouds was brought down and was demonstrated in a mild manner upon the earth; and people said to him, "What is the use of it?" His answer to them was "Of what use is a baby?" The baby will grow to be a boy and the boy to a youth and the youth to a man, and out of that experiment of Benjamin Franklin's, drawing the electricity from the clouds, we have developed the modern telephone and the telegraph and the electric street car service and the electric motors and all that great host of modern electrical appliances which are playing so important a part in modern manufacturing in modern city life and which is finding its way out into the country to improve the life of the farmer and to add to his social and other advantages.

Now it has not taken a great many years for that simple experiment to be developed into these modern, strong methods of work, and I think the people have paid more attention to the development of that than they have to the other side to which Benjamin Franklin referred, the growing of the baby into the boy and the boy into the young man and the young man into the fully developed, fully grown person.

We have been spending a great deal of our time on the development of the material side. Look over our organizations, take the work of our own Department, our organizations to a large extent have been made and have been conducted largely with this one thing in mind—how can we help the farmers to produce more? That is, the money side of life has monopolized our time and our attention, to a large extent.

In the banks of Canada there are to-day six hundred millions of dollars, probably the largest amount that has ever been on deposit, and one would say, "What a wonderful progressive country we live in." We have in Canada, approximately, six million persons. On the one side we have the six hundred million of dollars and on the other side we have the six million Canadians, and I think, if you will look over the course of events you will come to this conclusion, that we have been paying far more attention to the building up of those six hundred millions of dollars than we have to the building up and development of the six million Canadians, and the question which faces us to-day is "What are the most important problems in connection with our country, how do they, or how should they appeal to you as the women of the country?" Canada is growing out of her boyhood, growing into young manhood, growing into the full lusty condition of a great nation, and this is a matter of great importance to us to-day. Perhaps it was 20 or 30 years ago that we gave careful and close attention to those problems which most concerned Canada in her larger development; and you as workers in the Women's Institutes, you simply as members and workers in connection with the Women's Institutes of this country, ought to sit down and carefully set to finding out what are the most important problems that appeal to you as women of Canada, and in which you can take some part.

I was glancing over the three morning papers to see if there was anything in them fitting in with what I wanted to say to-day and I found confronting me on the first and second and fourth pages, certain great questions which stand out prominently and apparently are monopolizing the time and attention of the people. They are those great questions of transportation. How shall we build our railways; how shall we improve our canals; how shall we construct the highways along which the commerce of the world can pass and enable us as producers to transport our produce from one part of the country to the other, and if necessary to foreign countries? They have been the great questions in connection with transportation for many years, and still are monopolizing the attention of our people.

Then there is the question of immigration. People are coming into Canada by the tens of thousands. They are coming to us from the States to the south of us; they are coming to us from across the Atlantic, from all the countries of Europe. They are coming to us across the Pacific. Now there is a great problem in the making up of the nationality of the people, and whether we should in any way endeavor to direct and control it. There is a question that might appeal directly to you as women of this country. But here is one of the great problems facing the people of the country to-day—how shall we assimilate this mixture of people, coming from so many lands where the customs are different and who are introducing these new elements into the life of this country?

Then there is the question as to the development of our great natural resources. The development of cheap power. There is the question of government. We have had two elections in this country within the last two months, and you must have been impressed with that question of Government. These are just a few of the great problems which are confronting the people of Canada, and some people would say, "If we could only build our railways and keep them within our control, and if we could only direct and control the problems of immigration; if we could develop the forests and the mines and the fisheries and the fields so that the resources would be increased for our own use, and if we could bring cheap power from Niagara and the Ottawa River and the Trent, and could bring about right Government and direct our people along right lines of Imperialism, what more could one ask for?"

These are the questions which will for many years concern more particularly the men of this country, and I doubt if, after all, the women of the Women's Institutes will be discussing them or giving them very much attention. These are problems largely for the men.

The question then comes, "What are the problems for the women?" I think it is about forty years since the people of this continent were somewhat startled to hear that in New York City there was organized a Woman's Club, a club composed of women to discuss and to enlighten themselves on the public questions of the day. We do not any longer consider it a novelty to have women's organizations. And the fact that your Women's Institutes have grown so rapidly and are filling a long felt want, proves that there must be some work that does appeal to you. What are those problems? Some one has made the suggestion, in the settling of these great questions, "Shall women vote?" I am not going to venture upon any dangerous ground this afternoon. If the questions of transportation and immigration and the development of our resources and of cheap power and of Government and Imperialism, and so on, if they are to be settled by the women of this country, why certainly you should have votes, but if those are not the questions for you to discuss and settle, then perhaps some other answer might be given. Are you, as women, concerned more, or should you be concerned more

with the question of the six hundred million dollars or with the question as to the six millions of Canadians? I think if you will leave to the men, to a large extent, and throw upon them the responsibility of looking after the six hundred millions of dollars, you can take as your share and your duty and responsibility the discussion and consideration of the questions which appeal more particularly to the six million Canadians.

Now there are problems connected with men; and when I speak of that I speak of it in the generic kind—the human kind—that are of far more importance to this country than problems of money. It is of more consequence that the six million people of Canada shall be properly directed, properly educated, properly developed, than that the six hundred million dollars should within the next year be increased to seven, eight, nine or ten hundred millions of dollars.

I have jotted down three or four headings and I do not propose to talk at any length this afternoon. First of all and most prominent comes the problem of home, on which I had the opportunity of speaking last year. I do not know that I can add anything to it and I certainly do not want to take anything from it. The problem of the home is, to my mind, the greatest and farthest reaching of any problem that presents itself to the Province to-day—the home life, the home surroundings, the home conditions, the relationship of home to man. And I can see running throughout the whole programme of the meetings that you are keeping very prominently before you questions that concern primarily the home which is the foundation of any nation's greatness.

Coming next, there are the problems of the school. You bring up your boy or girl for the first five or six or seven or eight years in your home and you have that child directly under your care and, of course, in those few years you are giving the right training in the right direction, but after that time the responsibility for the training of that boy or girl will be divided between you and the person who occupies the position of teacher in the little school house. It seems to me the question of early training should appeal very strongly to the mothers and sisters of this country, and, if I am not mistaken, there are questions there to be solved by the Women's Institutes of this country which they alone can solve. The men have not solved them. Look at the conditions that have been provided. You send a boy out of your comfortable home where there are attractive surroundings, and you send him for several hours a day and for five days a week down to the school house—and there are a great many of those school houses for which we ought to apologize, to say the least. Now character is being formed there which will have a material effect upon the after life of those boys and girls, and it seems to me, if the men of this country cannot set about and provide better and proper school surroundings, and attractive conditions, and all those things which go to make up life so much in addition to the mere teaching out of a book, it seems to me, ladies, in your various localities that it would be well to take a census of your school conditions and see if there are not problems there that are of vital importance to you.

The next series of problems I have put under the headings of "Problems of Health," a sound mind in a sound body has been preached and preached until perhaps we have to a large extent lost sight of it. I have a pamphlet called Pamphlet No. 11. I received it from Washington. The American organization for the advancement of science a year or two ago appointed a committee to consider this question of public health, and out of it there has been organized the National Health League of the United States. It has overflowed the borders of the United States and has taken in a number of members from Canada as well. This question of school life and home life never stopped at international boundary lines. At

the heading of this little pamphlet there is an extract from a letter from President Roosevelt to the committee of one hundred.

"Our national health is physically our greatest national asset. To prevent any possible deterioration of the American stock should be a national ambition. We cannot too strongly insist on the necessity of proper ideals for the family, for simple living and for those habits and tastes which produce vigor and make men capable of strenuous service to their country. I can most cordially commend the endeavors of your committee to bring these matters prominently before the public.

"Poor health may after all be responsible to a large extent for many cases of so called ill temper and immoral actions. For a nation to permit great wastes to go unchecked is more than a suicidal policy. There are four great wastes to-day, the more lamentable, because they are unnecessary. They are, *preventable death, preventable sickness, preventable conditions of low physical and mental efficiency* and *preventable ignorance*. The magnitude of these wastes is testified to by experts competent to judge. They fall like the shades of night over the whole human race, blotting out its fairest years of happiness.

"The facts are cold and bare—1,500,000 persons must die in the United States during the next twelve months; equivalent to 4,200,000 persons will be constantly sick; over 5,000,000 homes, consisting of 25,000,000 persons, will be made more or less wretched by mortality and morbidity. We look with horror on the black plague of the middle ages. The black waste was but a passing cloud compared with the white waste visitation. Of the people living to-day over eight millions will die of tuberculosis, and the federal government does not raise a hand to help them."

Now apply that to your own surroundings and see how far this question of sickness and so on affects this person and the other person; there are very few people in the community who are not affected more or less by it. If things could be prevented, if there are means and ways whereby they can be lessened, it should be one of the great and foremost questions for our consideration, to see by what means we can lessen the illness and the sickness of this world.

We have had our attention brought to these things in this country, and that awful disease of tuberculosis is appealing to the people of our towns and cities particularly. The people must become aroused to this one great question, that the public health is after all our greatest physical asset, and you as members of the Women's Institutes should carefully consider as to how far you as individuals or as an organization can contribute something to relieve this tremendous burden which is now oppressing the people of this country. You can leave it to the men to look after the six hundred million dollars and take up for your consideration the six millions of Canadians, and, if anything can be suggested whereby the physical health of the head of the household, of the man or woman or the children can be protected, you will be doing your full quota to this nation.

Now there are three assets—*pure air, pure water,* and, I had first, *pure milk.* What a common source of complaint it is that our churches are not properly ventilated. They are not constructed on the right plans. Our school houses are not built upon proper plans. The boy and the girl come home after three or four hours work in the school and they have a headache, and they blame the studies. It is not that at all, but it was trying to do work in an impure atmosphere under unnatural conditions. Then when you come to your own home, we have a great deal yet to learn with regard to proper ventilation. The men will not take that up as they are not in the home long enough, but the women, who are compelled to spend so many hours a day in the house, will have to tackle the problem.

Pure water.—Probably the most important problem that we meet with in connection with large towns and cities. Toronto has been talking about it for twenty years. Millions of dollars have been spent and millions of dollars will have to be spent, because pure water forms one of the staple articles of consumption by every person, and there is no greater source of ill health and death at the present time than impure water. Then you go to the country and the old farm well which has served so many years and has become a part of the old homestead, surely that old well is all right? The very fact that it has been there so long should demand your attention to find out for yourself after all whether that supply of water is not only pure, but clean.

Pure milk.—This is a problem which more particularly concerns the people of the towns and cities, and especially of the larger cities. I see you have upon your programme a full consideration of that question, but if we can get the homes of this country to take up those three purities—pure air, pure water and pure milk, I guarantee that we would cut the death rate, not in two, but to a very small fraction of what it is at the present time.

There are a great many people who are living entirely in the past; they are living on their forefathers, or largely living on what they have accomplished. Then there are a great many people living in the future. Why are they not doing it to-day? They are going to do it to-morrow or next week or next year, they are always going to do something. The future never comes to those people. The only thing we have anything to do with at the present time is the present and if we do that the future will take care of itself, and I leave this with you, as members of the Women's Institute, that, if there is anything in connection with this work that is worth doing, do not leave it off till next year; do not leave it for some future time, there is only one time when it can be properly done and that is now.

I thank you for the opportunity of addressing you this afternoon and I wish you a Merry Christmas and a Happy New Year, and a very prosperous year of 1909.

THE CHAIRMAN: We are now to hear from Miss Van Rensselaer, of Cornell University, Ithaca, N.Y. The part of Miss Van Rensselaer's work with which I am most familiar is that relating to the courses in reading for farmers' wives, and if we can persuade her to say something about it, it would be a great advantage to us. She is a pioneer in her own line of work.

THE VALUE OF FARM HOME LIFE.

BY MISS MARTHA VAN RENSSELAER, CORNELL UNIVERSITY, ITHACA, N. Y.

Ladies and gentlemen:—A year ago I received a letter from Mr. Putnam asking me to attend these meetings. I said I was at that time too busy to come. This year I had another letter and I was still busier, but I could not resist it, and I am glad I did not. His letter had something of this tone, "Come over into Macedonia and help us." I have made up my mind that Macedonia is on the other side of the line, now that I have seen the extent and nature of the work you have been doing in this country, since I was here five years ago. Then, a little group of women met in a hall on another part of the campus. To-day you are in this fine room and even here you are crowded. You have come in the interests of the one problem which has been placed before you to-day as the important one.

I must congratulate you upon the good work you have been doing here and upon the example you are thus setting to other countries. When we had Women's Institutes in the state of New York last year we heard constantly of the Canadian Institutes. Persons have said, "In Canada they do this and I wonder if we cannot do something of that kind?" Go right on with this work you have started, keep ahead of us if you can, although, secretly, we do not intend to let you.

In the address of the gentleman who spoke to us this afternoon a very great responsibility was placed upon the women. He seems to think it is more important that the women take care of the men of this country than that they vote. I will not say anything upon that subject, except that I think the men cannot do their work well unless they are well fed, and they cannot be good business men and know how to spend this six hundred millions, to which he refers, in the interests of humanity unless they are well taken care of at home. I believe that such responsibility does rest upon the women.

The farm and the farm house are a partnership affair. The woman upon the farm is part of the institution of farming and to her is due, to a great extent, the success of the farm. We need the men in the business of housekeeping to give us the benefit of their inventive genius and to help spend the money for the betterment of the home and to bring certain business experience which they have for working out the home upon scientific and economic principles. Therefore, when you invite the men to the women's meetings or when you go to the agricultural meetings and you work together upon the same subjects, you are doing more to solve these important points than when you had the Women's Institutes and the Farmers' Institutes separately.

Why do men earn money? Why do they want an addition to their salary? Is it to put it into the bank? Possibly with some it is, but in their expenditures they are primarily interested to make better homes. They are ambitious to get incomes which will bring advantages socially and educationally to their families, and the women are the spenders. For that reason an educational movement is spreading over the country to aid women to know how to spend the money. Of 11,500 families which were studied in regard to size of income and expenditure, the total expenditure was forty-three and thirteen hundreds per cent. for food, eighteen and twelve hundreds per cent. for rent, thirteen per cent for clothes, four and thirty-seven hundreds per cent. for fuel, and one and twelve hundreds per cent. for lighting. In other words, for food, for rent, for clothing, for fuel and lighting, for household expenditures, eighty per cent. of the expenditure of eleven thousand families were those in which the women are interested. To what extent then shall women be interested for the expenditure of this large amount of money? Government appropriations have been made for the education of women in this country and in the States, with special reference to the farm home. It is a significant fact that the first State appropriation made for university extension among women, was for farm women, and so far as my knowledge goes the only State appropriation for university extension was for farm women. Is it because they are so ignorant that they need it? Not at all. First, it is an educational movement, and who is better qualified to listen to discussions upon food than the farm woman who has been interested in Institutes for years and knows what protein, carbohydrates, and fats mean. Men know the relative value of these in feeding cattle. Everybody is dependent upon the farmer, and we are all very dependent upon the farmer for health and food. Who, in that home, is keeping watch of everything that goes on? It is the farm woman. The men are interested in the production of the raw material; the women are interested in the use of the raw

material, and why shall farmers study to get good wheat upon their farms; why shall they study for the best corn? It is in order that they have good wheat and corn with which the women can make good bread. They study the best conditions, so that the product which the women manage and which goes out from the home shall be of a quality to make for healthy conditions in the city as well as on the farm. That is the reason when an appropriation is made for more scientific education among farmers, that with it is an appropriation for the women, which will enable them to handle that raw material in a scientific way.

I asked someone in our department who teaches the subject of human nutrition what I should say a woman should be taught on the subject of foods. This was her answer: "An explanation of the relation of the food principles and the use and place of each in the dietary. The comparative value of a food stuff as it occurs in one or another food, thus: the comparative value of proteid in milk and proteid in meat; fat in butter and fat in food. An explanation of what is known by a balanced ration with a discussion of its applicability to the food of man. Some simple means for computing the amount of food needed by an individual under given conditions with dietaries illustrating this point. An explanation of the art of cooking and the relation of cooking to digestion. The principles of bread making, meat and vegetable cookery, canning and preserving, egg cookery, etc. Plans for a family dietary with regard to the need of the various members of the family. The food needs of the baby, of the small child, of the boy and girl, of the man and woman. The relation of the health of the family to care and planning. Menus given to illustrate this point."

This is a large programme. But every woman in the home meets those problems every day of her life. She has the feeding of perhaps an aged person in the family, and someone working in the field. Perhaps she has the feeding of the teacher and the children in the schools and she has to consider as well her own dietary for health. There are few progressive farmers who do not know these principles of nutrition in feeding animals.

There is another reason why this appropriation is used for farm women and why you have in this country a body of women interested as you are to-day. If you represent a farm home, you are more dependent upon knowledge which you gain from books, from literature, from bulletins, than is the woman in the city. You make your bread, she buys her bread. You make your pies; she can throw a poor pie out and go around to the bakery and get another, even if her husband makes the mistake of saying, "That is almost as good a pie as my mother makes." You must attend to the question of the laundry in the home. The city woman sends her laundry out and it is brought to her in a day or two completed. There are people who go to the country to get a good square meal. The farmer's wife looks in the cellar to see what she has provided beforehand. The city woman sends to the grocery on the corner and the bakery, if company comes. Or there is sickness or accidents in the farm home and the farmer's wife becomes the nurse. A town woman sends out for a nurse and telephones for a doctor who is there in a few minutes. That is why the farm woman should be the best educated woman in the country. And why then are not the farm women to be the leading women in the country?

We have the rural free delivery; we have reading in the homes. Farmers' wives do more reading in our State than city women—at least we have every reason to think so from the evidence from reports of their work and the questions sent out from a large number of homes. They have longer and uninterrupted evenings for their meetings. We have the telephone system netting the country; we have

street car lines running past the door and I think there are many who have their automobiles and are planning electric lighting and power on the farm. With all those things, and with the reading the farmer's wife has been doing and with the intelligent interest which comes with the doing of her work, her mind is lifted out of the drudgery and she is looking towards ideals which will make farm women the happiest and best in the country.

The boys and girls are attending agricultural colleges while their fathers and mothers are making sacrifices so that they may do so. With Institutes and reading and extension work the parents are keeping abreast of the times and it is more wholesome for these young people to go home to someone who is reading, and someone who knows the same things those boys and girls are studying. The boy does not have to apologize for his mother to his chum, and say, "Oh, she does not know about those things." The boy is coming home and saying, "How is this, mother?", and "Cannot you help me with my history lesson?" And that is one of the values of the Institute which you represent. You are keeping in touch with the times. You are keeping in touch with the younger life and that is the way to grow old gracefully. A woman said when I remarked about the telephone coming into her house, "I do not know that I am glad the telephone is here, I have not been to town for three months. We can order everything now by telephone." We need to study not to settle down, but to advance with these improved conditions.

The subjects which you have to consider are broader than anyone can explain. A great many people think that domestic science, economics of the home, means cooking and sewing simply. In the one subject of foods we have a large and scientific study. The woman is the conserver of strength and health, which is another scientific study. She cares for the esthetic side of life and we put drawing into the schools so that the girl in the home may know how to hang the draperies in her house; may know how to wear her hats and her clothing. The laws of heredity and knowledge of life are for her to know and she studies sociology and biology.

Many have said since we started our home economics department, "What can you find in home economics for girls to study for four years?" The point with us is that a woman's education to enable her to live and help others to live demands more than there is time for. When you feed the family well you are doing the best temperance work there is in the world. I am not surprised that men are driven to drink when they do not have good bread to eat at home. And so women hold in their hands the morals of the country to a large extent.

The extension work among women in the state of New York was organized as a farmers' wives' reading course which provided bulletins similar to the government bulletins upon subjects pertaining to home life. These have been upon foods, sanitation, household management and house furnishing, as well as upon subjects pertaining to the relation of the woman to the social forces of her community. Accompanying the bulletins is a discussion paper containing questions to be answered by the readers and returned to our department. It is in this way that a close relationship is sustained between the reader and the college. In addition, the department since organized at the college is an experiment station in household matters and the women have the privilege of sending questions relating to their work to be answered in whatever department they are mostly clearly related. This is the work of the farmers' wives' reading course. There is now a membership of 13,000 women within the state who avail themselves of these privileges. As an outcome of the reading course, clubs have been organized in rural communities with

the women meeting once or twice a month for a programme. The bulletins serve as a basis for work. In addition to domestic subjects, more cultural topics are added to give variety and breadth to the women's reading. In general, these meetings are held as women's rural clubs, although in some cases they are in connection with the farmers' clubs with a programme divided according to the interests of the members. We visit these clubs whenever possible, assisting as need is presented.

A winter course of three months is held at the college with lectures in domestic science, two or three daily, and two laboratory periods each week. The women in attendance avail themselves of these lectures and have the privilege of attending other lectures in dairy, poultry, general agriculture or horticulture. The lectures are adapted to their needs, as many of them are interested in occupations on the farm outside of the house.

A four years' course in domestic science has been started, leading to the degree of the college. This requires the same entrance requirements as for any other department of the university and has the same scientific basis as a course in agriculture.

The interest in the study of the science of home life is advancing with us as it is with you and the evidences present in New York state for its need and for its success lead me to appreciate the work which you are doing and to congratulate you upon your accomplishment.

SECOND DAY—MORNING SESSION.

A portion of the morning session of the 10th was devoted to business methods in Institute work under the direction of Miss S. Campbell of Brampton. A few of those in attendance were grouped into an audience representing a regular Institute meeting which was conducted according to the methods indicated in the Institute Hand Book. Members generally are referred to the Hand Book for information as to methods of procedure in conducting meetings and for information regarding rules and regulations governing Institutes. These Hand Books are not furnished to all members but are put in the hands of the officers of both district and branch Institutes. In bringing the meeting to a close, Miss Campbell gave a few words of general advice. "You should all be proud to have your names enrolled as Institute members, and, if we consider how much we owe to our home, we will try to uplift our meetings and have high ideals in them. So many times I have been asked 'Can you give us some subjects for our Institute programme?' It does not make any difference what subject is taken, it all leads back to that one word '*Home,*' and, if that is the most important, then we should consider the building up of character in the home, and that is what we should take as one of the principal subjects in our meetings. Then, if it is the chief Canadian Institute, and it excels all other institutions in power and influence, we should bend all our energies to make the home pure. We should try to bring culture and purity into the home where the boys and girls are being trained, and where characters are being formed. I think you will all agree with me in saying that our Women's Institute is the best in our Province. I think it comes first on the ground that we have the subject '*Home,*' and home has been a divine force which has journeyed across continents accompanied by the atmosphere of joy, leaving in its pathway art, industry, songs and morals."

HOUSEHOLD CONVENIENCES.

By Miss Martha Van Rensselaer, Ithaca, N. Y.

I face a company of busy women and everywhere I go I find busy women who are anxious to learn how to save their time and strength so that they can accomplish more. We are worrying about the things undone rather than the things we are doing, or have done. We worry because we cannot complete what we have planned.

One hundred years ago women were doing a great many things that now are taken out of the home, and they are doing a great many things now that they did not do then. Then they did the spinning and the weaving of cotton, wool and flax, the carpet weaving and making, the knitting, tailoring, making boots, hats, gloves, collars, cuffs, underclothing, quilts, comfortables, mattresses, and pillows; they made soap, starch, candles, yeast, perfumes, medicines, liniments, crackers and cheese, and butter; they attended to the coffee browning, drying fruits and vegetables, salting and pickling meat. Now we do very few of these things in the home and still we are busy. We have conveniences in these days that they did not then have. Instead of candles, we have kerosene and gas and electricity. We can send for a steam cleaner to clean our houses and do it in half a day instead of having a house-cleaning week. We have sewing machines; but unfortunately, we have added ruffles and still have a great deal of sewing to do. We have the water works and plumbing in the house, and that simplifies labor. The heat supply for the house comes from the furnace. There are sanitary measures in the house which did not exist then, which really saves us a great amount of work. The ashes and garbage are collected, and various other means have come into the home whereby labor is saved; we have public bakeries and laundries and one might think there would not be very much work left for the women. Why is it that house work is never done? We need to simplify. Instead of having three kinds of cake for a meal, we need one or less than one. We shall still go on making pies just as long as there are men in the world, and we are going to study the laws of health, so that we shall keep the men in such good condition that they can digest those pies. We think it is hard to entertain because we want to do it as well as our neighbor does it and we want to do it a little better. We are refusing, sometimes against our own inclination to invite company because it is so much work, whereas the old time hospitality ought to be kept up for the sake of the children as well as for our own sakes; it is altogether too good an institution to go out. The every-day fare is good enough for company, if it is good enough for your sons and daughters and husbands. I imagine that many visitors would be just as happy with bread and milk as they would with salad and three kinds of cake. We should have the hospitality at the same time.

There are other reasons why we are so busy so far as our work is concerned. I shall make a statement which you may challenge if you wish, and that is, that housekeeping is the most backward industry in the world. The superintendent of a factory studies in every way to save the labor of his men, because he does not propose to pay for labor that is not necessary. If they are making boxes they arrange so that those boxes are not handled any more than is necessary, and he puts in just as many nails as is necessary and no more. He has his tools arranged in such a way that a man does not have to walk all over the shop to get the tool that he uses the most. He studies these things from an economic standpoint. The

work is arranged in such a way that he is conserving the time of his men, therefore he is conserving his financial interests. Have we given the same attention to the work in the house? I read you some figures yesterday which indicated that eighty per cent. of the income in 11,000 families was spent in household expenses, but what the man is really doing if he has an income of $2,000 is studying to see how he can make it $3,000 when the expenses are 80 per cent. of that amount, rather than seeing that the expenses are sixty per cent. The time and energy of the man is spent upon increasing his income more than upon decreasing the family expenses. All he does say occasionally is, "I cannot afford you a new hat this year," or, "I can get along without a new overcoat." The woman as a spender can, if trained, save the family income, which is as good as earning more. We are spending millions of dollars every year for the wages, living and waste of domestic service. It is therefore the work of an economist to find out whether we are paying for any labor that should not be paid for. It may be lessened by making the kitchen smaller. It may be in taking away two steps which lead from the kitchen to the store room. If the housekeeper or her maid takes those two steps a great many times a day, as she will, some one is paying for unnecessary time and effort. It will take perhaps half a day to raise the floor and place everything on a level. We are not looking ahead, we are not considering it except for present conditions. That step is there and ought we to take it out as good business housekeepers the same as the factory superintendent would do? It is hard to get these changes made in a house, but a man in his work says that his time is money. Is a woman's time money? Are we regarding a woman's time from an economic standpoint? In the statistics given for women who are wage earners in the States, those engaged in housekeeping are not enumerated, but if a wife dies, a housekeeper is employed, who is counted in the statistics as a wage earner. Those statistics enter into the record of the economy of the nation. What about the women of the home? Someone has said that she is sure of a steady job and her board and clothes. Just as long as she can keep at it and does not break down, all is well. If she is a part of the household economy her time should be counted as money. The money may not go into her pocket but she is the partner of her husband in the building up of their home, and whether it goes into her pocket or not she figures in an economic way, and shares with her family the benefits which come from her efforts.

If a man starts a laundry in a town he buys the machinery that will do the work in the least time and with the least effort, because he cannot make money any other way. What does the woman in the home do? I was saying something at a meeting in our state about mangles for ironing and I suggested something in regard to the use of power on the farm. A man came up after the meeting with his wife and said, "I wish you would tell me about that mangle." She hit his elbow and he looked around and said, "What do you mean?" (A man always has to ask you why you stepped on his toes). "Why," she said, "we cannot have a mangle this year. You bought the washing machine this year, we can get along till next year without the mangle." He replied, "I buy farm machinery, I have water in the barn and I have the power attached to various machines and I have attached the power to the washing machine and if this mangle is any good you are going to have it." That is the right spirit. This sentiment was perhaps because he did not want his wife to wear out, but there was something more than that. Will it pay for a woman to spend a whole day doing her ironing, if she could do it in twenty minutes with a mangle? How long will it take to pay for the mangle if the woman's time is worth anything? The washing machine question has been

settled in most country districts. I find that very few women are washing in the old way and while I cannot tell you what is the best washing machine, I do advocate the use of one and if you do not have power on the farm I think man and boy power is fine.

Some of you will see your wringer turning without your hand to turn it. You will have electricity or other power attached to the wringer, and you will stand by with folded arms and see the washing machine work, and then change the power over to the wringer and start the clothes through it. They will come out well pressed and much better than can be done by hand. We will not have electricity on the farm very soon, but there is other power that may be attached to the wringer, which you are already using for other purposes.

There is a bulletin issued by the dairy department of the Missouri Experimental Station which says: "A laundry provided with stationary wash-tubs, with washer and wringer for power use is an innovation, but why should not the woman of the farm be provided with modern appliances? Why should she be compelled to toil as her great-grandmother did? A farmer no longer reaps with a sickle, or even with a cradle. He rides his plow and often his harrow. He rides his grain drill and grain planter and corn cultivator. He rides his grain harvester and his corn harvester. He loads hay by machinery and pitches it into the barns by horse power. The time has come when it is positive cruelty to compel, or even allow, a woman to toil on without running water or machinery power in the house. The same steam, water and sewage system that must be present for the dairy will take care of the laundry. The same power used for grinding feed and separating milk and pumping water and sawing wood will turn the washer and the wringer."

The prices will vary somewhat, but the following will be a guide to the cost of equipping a laundry room. Stationary tubs with 3 compartments will cost about $30. A power washer, $40 to $55. A power wringer, $40. Piping and connections, $5. Drying room with steam piping, $10. A good, well-equipped home laundry will cost about $140. I understand there are many ways of using $140, but here is a problem: How long shall we go on wasting money doing it in the old way? We waste money, time and strength. The bulletin says: "An investment of $140 for one year at 7 per cent. equals $9.80; deterioration, assuming that it will need to be replaced every fifteen years, equals $9.35 per year, or a total of $19.15, or say $20 per year, or 38 cents a week; add to this 10 cents more for gasoline used by engine. If the farmer were compelled to kill and dress two hogs every week throughout the year, he would think nothing of spending 50 cents a week for machinery which would save much labor and enable him to do more work in less time. The power ironer, costing about $60, may be added, if desired. Such a laundry is to be desired also, because it will practically insure clean garments worn by the milkers. A drying room about 6 x 12 ft., located between the dairy room and the laundry room, provided with steam pipes for heating, will cost very little and will insure quick, clean and easy drying in any weather. A power laundry like this may be rented to the neighbors for say 50 cents per day, they to come over and do the work. Such an arrangement will in a measure lighten the burden now resting so heavily on the women of the farm."

Some person said the reason farmers have so much to do is that they do not co-operate. The laundry presents a plan for co-operation which a good business woman can carry out. Women on the farms are developing business ability which is marked and admirable. There is an opportunity for a woman in a farming community to try this and let us all see how it works. If, by an investment of $140, or even $200, she can get a laundry plant, it is an experiment worth trying.

A MEMBER: There could be an arrangement for the laundry to be connected with the cheese factory. The clothes were collected on the milk wagon every day. Some said it would be a good deal of work to collect them onto the wagon. We cannot wash clothes and make butter in the same room, but it is easy to have additional piping and have a room in connection with the factory where the washing could be done.

MISS VAN RENSSELAER: In regard to the bread and cake mixer. There is such a difference in flour that there is difficulty to get the right proportions. One learns with experience, however, to put in the right quantity of flour at the start. I should be as loath to give up the cake mixer as the bread mixer, and yet the first experience with them is often discouraging.

A MEMBER: How about mixing cookies with a cake mixer?

MISS VAN RENSSELAER: It may be done or the bread mixer may be used for the purpose.

A MEMBER: How long would you mix the cake with the cake mixer?

MISS VAN RENSSELAER: I think the recipe says from 3 to 5 minutes in using a bread or cake mixer. I should use it longer than the recipe says.

A MEMBER: The point is raised that it is difficult for women to turn the bread mixer?

MISS VAN RENSSELAER: That depends on how much bread you are making. The small mixer usually mixes from three to five loaves. If a woman is ordinarily strong, I do not believe she will have any difficulty, and my experience is that it is easier than stirring and kneading by hand. It would be a good thing to get the men of the family interested. He cannot knit and darn and he likes to go out into the kitchen and help get the bread ready for the next day.

A MEMBER: Are those mixers hard to clean?

MISS VAN RENSSELAER: No. The pail is very plain and we will assume that the cleaning of the pail corresponds to the cleaning of a pan that you mix your bread in, then you have one other implement to clean which is more complicated; the cake mixer is more difficult, it consists of three wires, but I would rather clean them than to use the old process.

A MEMBER: Are the cake mixers expensive?

MISS VAN RENSSELAER: $2.25 is what we pay on the other side. There might be a duty which you would have to pay here.

A MEMBER: How do you mix the bread if you turn the mixer at night, do you allow the bread to raise all night?

ANSWER: Yes, or it may be started in the morning.

A MEMBER: Does it not run over at night?

ANSWER: No, not if kept at a proper temperature. The amount and kind of yeast also makes a difference.

A MEMBER: Do you keep it in cold storage?

ANSWER: No. If you are speaking of hot water, it would be better to mix it in the morning, but in cold weather there should be no difficulty.

A MEMBER: I mix mine about half past seven in the morning and about half past eight it is up to the top of the bread mixer. I have mixed it at night, but in mixing at night I use much cooler water than in mixing in the morning.

A MEMBER: What about a vegetable parer?

MISS WATSON: The one we use in Macdonald Institute pares enough carrots or potatoes ready to cook for over 140 people in twenty minutes. I also use a small apple parer that costs 75 cents. This potato parer was made in Rochester.

MISS VAN RENSSELAER: I should like to ask how many of you have used

denatured alcohol in your work. The prices are now almost prohibitory. Bought in large quantities it costs in the United States 50 cents a gallon, while in France and Germany where more is manufactured it is 25 and 30 cents. It is used in a flatiron to great advantage. Alcohol stoves are becoming common in place of oil or gasoline stoves.

Lamps filled with denatured alcohol and having special burners are successful.

When this alcohol is cheaper it will doubtless be used in our housekeeping in place of oil and gasoline. A denatured alcohol flatiron now much used is a great saver of heat and effort.

A MEMBER: What do you say about a charcoal iron?

ANSWER: I think it has its advantages. If I could not have the denatured alcohol iron or the gas or electric iron, I should be very glad to have the charcoal iron.

A MEMBER: You can get them for 75 cents.

A MEMBER: They need a blower, which costs about 40 cents.

MISS VAN RENSSELAER: There are many smaller devices for saving labor. The table and sink should be made to suit the height of the worker. The tables are covered with zinc which is easily kept clean; they are on castors which enable the woman to move her table of supplies or dishes wherever it is most needed; the flour barrel is placed on a frame under which are castors and the barrel hung on a pivot; a dumb waiter is moved by means of pulleys from the kitchen to the cellar and window cupboards on the outside of the window are used to hold perishable materials in cold weather and thus save trips to the cellar. Kitchens are finished in plain woodwork and the walls covered with washable material. The wood-box is on castors, so that it may be easily moved when the kitchen is to be cleaned. The dustpan is fitted with a handle rather than requiring the woman to bend over to sweep up the dust. The kitchen table is furnished with a scythe stone for keeping the knives sharp and there are shears which are used in various ways in the kitchen; there are measuring cups which are accurate; flexible knives for cleaning surfaces of pans, kettles and dishes; cork and sapolio for scouring purposes, and wooden skewers for cleaning the corners of bread-pans; the garbage pail is supplied with a fresh newspaper each morning to receive the garbage rather than to keep a dirty pail in constant use; a bag is hung in a convenient place for strings; there are hooks for brooms; mats of asbestos to push under the kettle to prevent the burning of material; the holders have a string and hook attachment; a tray is always at hand upon which to carry dishes, preventing numerous trips between dining room and kitchen; a brush is used for washing potatoes and other vegetables—all these show the ingenuity of the thoughtful housekeeper.

AFTERNOON SESSION—DECEMBER 10, 1908.

Miss Isobel Rife, Hespeler, Presiding.

"HOW THE MACDONALD INSTITUTE MAY HELP THE WOMEN'S INSTITUTE."

By Miss M. U. Watson, Guelph.

The first Women's Institute Convention met in Macdonald Institute. Those of you who attended it will remember how you climbed over and around the builders' unfinished work to reach our Assembly Hall. It was ample then, but you have long since outgrown it. Our work has grown also, but when one thinks of your 12,000 members, our present term list of 130 students seems very small. We hope, however, that the influence of their training will count for something in the future.

I am told that you wish to hear something of our classes before hearing of the subject assigned to me.

Over one-third of our present students are here for two years. Most of them are in the Normal class studying to become teachers of domestic science in Canadian public schools. We get pupils who wish to be trained for other kinds of teaching, but they are told frankly that we aim only to produce teachers for public schools. By means of these teachers we hope to spread the gospel of home economics throughout Ontario. Perhaps few know that the Government of Ontario is encouraging this by giving very liberal grants to any city, town, or country school which adds this subject to the curriculum. We need home economic missionaries to go through the country and waken the school boards to their opportunities. Perhaps the Women's Institute will do it.

A few of our two year students are women who have had a good deal of household experience and wish to earn their living along the same line. There are many capable women in this country working hard for very small returns who do not yet know that in the field of Institution housekeeping there is a profitable opening for their peculiar talents. Institution housekeeping is family housekeeping in a large way, and the qualities which make a good housekeeper in a small way are those valuable in the larger place. I have come to the conclusion that executive ability is the chief talent necessary. That is, the ability to make other people do their work by direction and instruction, if necessary; the ability to direct the work of many at once, so that at all times she has the threads of her responsibilities well in hand. This is not the same as organizing ability. Many people are able to set a thing going but cannot keep it going. It takes the added ability to keep things going without friction to make executive ability. We never expect to create executive ability in any student, but when she has it we hope to develop it and train it, so that when her chance comes she will not spend two or three years experimenting on the Institution. That has proved expensive to the Institutions and they are rapidly coming to demand women who have studied the business. So much for our professional courses.

Rather less than one-third of our girls are here for a year's work in the Homemaker course. This is so popular for young girls, that we could have had many more than the thirty-seven who now tax our resources to the full. There is not time in one year for much of the science given to the teachers and housekeepers, but they have more sewing and for the rest we try to do what many

mothers are already doing that is, teach them the best methods of conducting household affairs and give them the reasons, as far as we can.

The balance of our girls are in the Short Courses. Most of them take the domestic science course which is an abbreviation of the Homemaker course without examinations. So popular is this that the forty-eight places open after Christmas have been filled for some time. Then we have the new short course in sewing opened to meet the demand of the girl who wants to make her own dresses and sew for the home people. Home dressing we call it. She spends a good deal of time dressmaking, some time embroidering, some time in the millinery and laundry classes, and some time studying colour combinations.

These are our courses. I cannot take time for details. The proof of our work is of course in the girls who go out from us. We have a good many sisters of old girls and like to think their coming means that our work is of value.

What Can Macdonald Institute Do to Help the Women's Institutes?

The farmers of the country have been sending their questions and difficulties for years to Mr. Zavitz and the Horticultural and Chemical departments. There is no reason why the women of the country should not use Macdonald Institute in the same way. You may remember that last year I gave you a general invitation to send in questions to which you could not find the answers along any line of work we are engaged in. We have had some response to that invitation and are glad to renew it this year.

I listened yesterday with great interest to the district reports. Running through them all was the old difficulty which branch presidents have in persuading the members to prepare a paper, or to get up and say something at the meetings. Here we may be able to help you. Macdonald Institute is accumulating a good library and takes a great many magazines. The President of the College is willing to add more books to the library in order that we may help you, and I have a scheme to tear up the magazines and pick out the good articles and make them available to Institute members who are willing to get up papers. We hope to catalogue them and so find them readily. One woman wrote me last year, "I have to get up a paper on the food value and preparation of fruit. Can you send anything to help me?" We sent her two pamphlets and a book and believe she found them useful. We can do more of this work and shall be glad to. If you do not want to write the article on your subject, we may be able to send you a magazine article on it which may be read at your meeting. You may not agree with the article, but it will probably excite interest and perhaps lead to profitable discussion.

If there is any other way in which Macdonald Institute can help you, write to us about it. We do not promise to be an old-fashioned "Inquire within" and answer all questions, but we do promise to help you in every way we can.

QUESTION DRAWER.

Mr. Putnam: I have classified questions asked and handed most of them to our Institute workers. May I ask that you be prepared to answer those questions for the benefit of the audience when I call upon you. I will now call upon Miss Watson of Macdonald Institute to reply to some questions I handed to her.

Miss Watson:

Q.—What sum of money would be required to dress a farmer's daughter for one year?

A.—That depends upon the wisdom and extent of her early training. If she has been taught to sew and make most of her own clothes, and trained by experience in buying, she can dress very cheaply indeed. Some girls will dress well on $5.00 a month, while others cannot manage on $25.00 a month. It costs more now than it did a few years ago. No sum can be fixed. One thing is certain—a well-trained daughter will follow her grandmother's old saying and "cut her coat according to her cloth."

Q.—Do you make a Christmas cake without milk or baking powder?

A.—The genuine Christmas cake is made without milk or baking powder. It is a pretty solid mixture, and the lightness it does have depends on the eggs which go into it, the way in which it is mixed, and the way it is baked. The last is perhaps the most important thing and is certainly the most difficult. The Christmas cake is the richest one made. Plainer fruit cakes are made and milk used in them. In this case it is necessary to use some lightening agent such as baking powder, or cream of tartar and soda.

Q.—How can rust stains be removed from linen?

A.—There are various ways. One of the best ways is to use a weak solution of oxalic acid made in a cup of hot water. Dip the stain into the hot solution a moment and immediately wash out every trace of the acid, which eats the cloth if left in. The acid is a deadly poison, is dangerous to use if the skin of the hands is broken, and will destroy all color. It is therefore risky unless used with great care. There is another way by using a mixture of lemon juice and salt and exposing to sunlight. It may have to be repeated two or three times but is safer.

Q.—What is the best way to remove warts from the finger?

A.—They may be removed by using lunar caustic.

Q.—Don't you think that exchanging recipes just adds to the burdens of the housekeeper by giving her more things to do?

A.—Yes, I do, if the housekeeper depends on recipes for everything she does, but we do not believe here in that kind of cookery. There are a few basic recipes which any woman of intelligence will memorize speedily. Most new recipes can be recognized as variations of the basic recipes, and used only as a suggestion which should not be burdensome. The elaborate recipes of very fancy cooking may easily become burdensome, but the average woman is concerned with the plain wholesome cookery which can be varied the year round with little reference to written recipes.

Q.—What sort of hot supper dishes would you consider appropriate?

A.—I take for granted that dinner is at midday and supper about six o'clock. You must remember that people who have little exercise and fresh air are better with the things that are most easily digested and they will not want a large quantity. For men who have plenty of hearty exercise and whose stomachs were not abused in childhood, you have a wide range of supper dishes. You may choose almost anything except roasts which are not usually associated with supper. Therefore your choice will depend upon the tastes of the family and their occupations. You will doubtless prefer those which can be prepared largely beforehand, or which take but a short time in the making. Among these you have innumerable cheese and egg dishes, cream soups, all the scalloped dishes, and many warmed over meat and vegetable combinations.

Q.—What is the cost of a six weeks' course at Macdonald Institute?

A.—Our shortest course lasts three months, which costs approximately $60.00. That amount will cover the cost of board, lodging, laundry and tuition.

Q.—Why is it that we have twenty-seven lawyers and only seven farmers in Parliament? Is it because farmers are not educated as well? Why cannot we have more of them there?

A.—You will remember that a lawyer spends a good many years training himself to speak well, argue soundly, and present his ideas by talking. The farmer has usually spent most of his years in doing things, rather than in talking about things. It is, therefore, easier for a lawyer to use his training and his occupation to bring himself before the electorate and persuade them to vote him into office. It is easily seen why there are so many lawyers in Parliament. I am not prepared to say they are the best representatives along many lines, but ideas and projects must be presented by words in Parliament and the lawyer is certainly better trained to do this than is the average farmer. There is no doubt that we are increasing the number of farmers, and the people of this country will be well pleased when more farmers can persuade the country to send them to Parliament.

Q.—Why is there so much talk about what we shall eat? A more important subject is food for the soul.

A.—Like most of you, I believe that what this questioner recognizes as the soul, is the most important thing in our lives. But the body is important too, the one conditions the other. The soul governs the body, but the body influences the soul. You cannot build the body without food, and you were told yesterday that, if the food is ill chosen, the soul will suffer. We all know it from experience. There is no doubt at all that the soul whose body is well nourished and well cared for, whose brain is sound because the whole body has been well nourished and kept, is going to do better work in this world than the soul whose body is powerless to obey the soul's orders half the time. I am not going to say one is more important than the other. We are put into this world with bodies and we may be quite sure that the power which put us into this world meant us to take care of that body and use it to the best advantage. You cannot do that unless you feed it right. Therefore food is important. Judging from the general ignorance of foods and feeding, few people are at present thinking too much of the subject.

Mr. Putnam:

Q.—How would you interest women in current events?

A.—We get one woman to write a paper and that simply leads to a discussion that takes up the most important events in the newspapers and magazines. These are among the most important and interesting meetings we have. We got a little outside help and then used the latent talent among the members. So many say they cannot get members to write papers. The committee simply makes out the programme and tells Mrs. So and So she is expected to write a paper, and it is always forthcoming.

Q.—Can we not change the name of the Woman's Institute to something that will apply more to the young girls and young ladies?

A.—After discussion it was decided to retain the name "Women's Institutes."

Q.—Should the branch Institute receive a share of the Farmers' Institute grant?

A.—No, the grant which the Farmers' Institute gives is for district purposes, for the extension of the Institute, and for such other work as properly comes under the direction of the district officers. If the branch Institute wishes to apply to

the township for a grant or to the town council, they are at liberty to do so, but Farmers' Institutes grants are supposed to be devoted to district purposes.

Q.—The President and Secretary shall be ex-officio of all committees. What does ex-officio mean?

A.—It means that, by virtue of their office, the fact that they are Secretary and President, they will become members of all committees.

Q.—Do you think it advisable to have a change of President from year to year?

A.—Very often it is, but where you have a good President I think it is well to keep her in office. It is not well, however, to retain the one person as President for too long a time for fear that, when that President does drop out, no one will have that confidence necessary to take up the work where she left off.

Q.—When more than one member of the family attends meetings and only one fee is paid, do all members of the family have an opportunity of voting or only the member who pays?

A.—Twenty-five cents does not cover a whole family. Only the member who pays can vote.

Q.—Should the Secretary of the Branch Institute receive pay for her services?

A.—Yes, if she is worth it, and the funds will allow. For the most part the duties devolving upon a branch Secretary are not very arduous, and they are, generally speaking, quite ready to give their services without remuneration.

Q.—Should the Government grant not be paid in full to the branch Secretary without any discount?

A.—Yes, Government cheques are supposed to be paid at par at all chartered banks.

Q.—Do you think it would be advisable to take up a collection at our public meetings when we have a delegate there?

A.—You may, but do not make that payment compulsory. Do not take a collection at the door. Do not make people feel that they are required to pay for the privilege of attending the meeting of the Institute. The rule when delegates are sent out at the expense of the Department, is that the meetings shall be free to every one. It is well to avoid the taking of collections at Institute meetings. Endeavor to finance your organization in some other way.

HOUSE PLANTS.

By Wm. Hunt, Ontario Agricultural College, Guelph.

In listening to the reports from several districts, I was pleased to note that the subject of floriculture had been taken up at some of your regular monthly Institute meetings. I feel sure, after hearing these reports, that the members of your Institutes are in sympathy with this work, and that you realize that plants and flowers in and around the home are great factors for good, helping by their beauty of form and rich coloring to make the home cheerful and bright, as well as being objects of interest from an educational point of view.

Another feature of your reports that appealed to me was, that you are giving particular attention to the young people connected with your work. In my talks to Horticultural Societies throughout the Province, I have always strongly advocated trying to create in our young people a love for plants and flowers. Very

gratifying results have been attained by local horticultural societies in many places by the distribution of plants, bulbs, and seeds among school children. This is a good work, and I am glad to see that in some places your Institutes are pursuing a similar policy.

I well remember the old school of my boyhood, with its shrubbery and little flower gardens for the older scholars. These were often made use of by our teachers in giving us lessons on the care of plants and flowers, and in nature study work.

My own home where I spent my early days was a veritable bower of climbing roses and trailing vines. One particular variety of fuchsia, my mother's favorite, "The Rose of Castille," I had not seen for nearly thirty years, until I saw it here in the college collection. The lessons in floriculture which I learned at school and in my old home seem to come back to me more vividly as years roll by, and are among the most pleasing recollections of my childhood years. Early associations and environment leave lasting impressions on the minds of our young people. These should, therefore, be of as pleasing, bright and inspiring a nature as possible.

The following lines, taken from a very old magazine, seem particularly appropriate for an occasion of this kind, and the lady who wrote them seems to have been imbued with the right spirit as regards the importance of interesting young people in the culture of plants and flowers around the home.

"These are the flowers to which sweet memories cling,
That I love the most to see,
And these the flowers that ever bring
Old sights, old scenes to me.

For I recall my childhood's years
When life was new and bright,
And only counted for its tears
The dew, that fell at night.

I see again the country home,
With all my playmates there,
The meadow lands we used to roam
To find the cowslip's lair.

The garden, that we called our own,
The flower bed that once was mine,
The little arbor overgrown
With scented jessamine.

All these, with many more beside,
Are vanished from my view,
Each year but makes the breach more wide
Between the old and new."

—*Aunt Judy's Magazine.*

Healthfulness of Plants.—There has been a difference of opinion as to whether it is healthful, or not, to have plants in the house. My own opinion is that healthy plants are healthful in living rooms. Plants are not considered to be healthful in sleeping rooms. When plants are unhealthy from bad drainage or a stagnant condition of the roots, they may prove a source of danger from the miasma that arises from the stagnant condition of the soil. Instances have been known where plants not in a good healthy growing condition have proved a menace to the health of the people.

Plants in pots set in jardinieres are also a source of danger in this respect, and should be examined every week or so, and any surplus water in them removed, and the jardiniere cleaned. Surplus water in jardinieres soon becomes stagnant

and impure and proves detrimental to the health of the plant, as few plants, not even aquatic plants, like stagnant water about their roots. Many fine palms and other pot plants are often badly injured or killed in this way in jardinieres.

Humidity and Temperature.—One of the main points in the successful handling of house plants is to give them suitable atmospheric conditions. A great many people think that the temperature of dwelling houses is not kept high enough to grow plants successfully. This is not often the case, as the temperature of dwelling houses is usually ten or twelve degrees higher than that of most greenhouses. It is often not so much the temperature that is at fault, as the dry atmospheric conditions. The atmosphere of the dwelling house, as a rule, is kept too dry for house plants to do well. There are various ways of remedying such conditions. One is to sponge and spray the plants frequently with clear tepid water. This helps to keep them clean and also lessens the danger from insect pests. This spray-

Begonia "Paul Bruant." A splendid variety, but difficult to propagate.

ing involves more or less trouble, as the plants have often to be taken to the kitchen sink to be sprinkled or sponged. By having a piece of oil cloth under the pots, the plants can often be sprayed in the window and the window kept clean as well. There is a small spraying apparatus called "Scollay's Rubber Sprinkler" which is very useful for this purpose, and can be purchased at any of the large seed stores. One with a bent nozzle is the most convenient, as it can be used to sprinkle underneath the foliage and leaves of the plants. Many insects, particularly the red spider, which attack the under side of the leaves, are very injurious to house plants. Frequent spraying of the under side of the foliage is the best preventive for most insect pests. Some plants, however, should not be sprayed, owing to the hairy or rough nature of the leaves. A good general rule is to sponge and spray freely the glossy or glabrous leaved plants, while those having rough leaves, like the Rex Begonia, should not be sprayed or sponged at all. Even geraniums should

not be sprayed very often and only on fine warm sunny days. Do not, however, spray the blooms of plants, if this can be avoided.

Pans of water on the heater or stove, or a steaming kettle, help to create a moist atmosphere, or even the evaporation from a saucer or two of water placed here and there underneath the plants is beneficial. A moist atmosphere and an even ordinary house temperature of about 65-70 degrees in the day time, and 50-55 degrees at night are the best conditions for plants.

Cold draughts are very injurious to plants. Ventilate from the top of the window in winter unless the weather is very mild and warm, so that the cold air does not strike directly on the plants.

Soil.—Well rotted sod about four inches thick, and cow manure or well rotted

Pompon Chrysanthemum ("Snowdrop"), small flowered variety. The Pompons are specially suited for window plants.

barnyard manure makes the best potting compost for plants. Late fall or early spring is the best time to make the compost or sod pile. Sod cut from loamy soil from a pasture field where the grass has been kept fed down is best. Sod from heavy clay or swamp soil is not desirable, or from where couch grass or coarse weeds are growing. Sod or soil from near pine or cedar trees is not good for plants. Two or three parts of the sod to one of manure is about the right proportion. The sod pile should be made out in the open in a corner of the garden. Place two layers of the sod, grass side down, on about a yard square of ground, or larger space if required; spread about four inches of manure on the top of these two layers of sod. On this place other layers of sod and manure, as before mentioned, until the pile is two or three feet in height. Put some wire netting over to keep off chickens. In six months the compost should be ready for use. Chop

or slice down the compost with a sharp spade so as to get the proper proportions of sod and manure.

Sharp, fine, pit or lake sand can be mixed with the soil compost, if required. The sod should be worked moderately fine before using. A wire sieve having a three-quarter inch mesh can be used for this purpose. Chop or pull to pieces the fibrous part of the soil and mix in with the rest.

For geraniums, chrysanthemums, bulbs, and the stronger growing plants, one part of sand to eight or ten parts of soil may be used if the soil is of a clayey nature. For begonias, fuchsias, coleus, palms, dracenas, and similar plants, one or two parts of leaf soil or black soil from the bush can be used in addition to

Another variety of the Pompon or Daisy type of Chrysanthemum (*Rose Travena*).

Sansevieria zeylanica (Bow-String Hemp Plant). One of the best gas-resisting house plants there is. It likes a warm room and not too much water at the roots.

the sand. Unused leaf soil or black soil from the bush is not good for plants in pots.

Fertilizers.—The common manure fertilizers, such as may be used in the garden, cannot for sanitary reasons be used indoors. Most of the prepared commercial fertilizers sold in seed stores are more or less useful for plants. Care should be taken in the use of these. It is safe to begin with only about half the amount usually recommended. Very heavy doses of fertilizer sometimes seriously injure plants or produce a rank growth that induces disease. Fertilizers should only be applied to plants that are well established in the pots and that have about exhausted the soil they are in. An application of fertilizer in such a case is sometimes better than re-potting plants. Begonias, ferns, and a few other plants, do not require fertilizers, if the soil has been properly prepared. Geraniums, chrysanthemums, and other stronger growing plants will often benefit by an application

of some kind of fertilizer. The ordinary commercial fertilizers, such as nitrate of soda, muriate of potash, and superphosphate may be used, but these should be applied to the soil in small quantities. A very small quantity of each of these fertilizers, about the size of a pea, spread on the soil around a large geranium, chrysanthemum or similar plant, will be sufficient. This will dissolve and permeate the soil when the plant is watered. The fertilizer should not be allowed to touch the foliage. A liquid fertilizer made by dissolving half an ounce of nitrate of soda and the same quantity of muriate of potash in two gallons of water, and about half a teacup of the solution given each plant every two or three weeks, is beneficial. Avoid using a too strong solution of any fertilizer, and apply it when the soil is moderately moist.

MEMBER: How do you treat a Rex Begonia that is dying on the edge of the leaves?

ANSWER: Water it sparingly so as to give it a partial rest for a time. Rex Begonia leaves are often injured by having water sprinkled over them and then being placed in the sun. Rex Begonias like shade at all times and should be kept indoors.

Anthericum picturatum. A splendid foliage plant for a shady window. Must be kept from the hot sun, and the roots kept well watered.

Freesia refracta alba. A bulbous-rooted plant. Six bulbs are set in the 5-inch pot shown. Flowers deliciously perfumed.

MEMBER: What makes the *Asparagus Sprengerii* turn brown on the ends of the foliage?

ANSWER: The plant pointed out is not the *Asparagus Sprengerii* but is the *Asparagus Plumosus*, often erroneously called the Asparagus *"Fern,"* but it is not a fern. Possibly the plant referred to requires re-potting, or perhaps a short period of partial rest. To rest plants, place them in a temperature about ten or fifteen degrees lower than a growing temperature and give them less water.

MEMBER: Do you give them water while they are resting?

ANSWER: Yes, it would not do to dry these (Asparagus) plants out very severely. Keep the soil barely moist when resting them so as not to induce much growth. Re-pot the plants in a few weeks. The *Asparagus Sprengerii* likes a rich, friable soil.

Potting Plants.—Over-potting, or potting plants into too large a pot is a common mistake of amateur plant lovers. A pot two sizes larger than the one the plant has been in is usually quite large enough. Too large a pot often results in

an unhealthy plant, as too much soil induces over-watering, which causes a sodden condition of the soil not conducive to root action or good growth. Use plenty of drainage, especially in large pots. In the latter, nearly an inch of pieces of broken flower pots, gravel, coal cinders, or small lump charcoal can be used. Press the soil moderately firm around the roots of plants when re-potting. Water newly potted plants well once, and shade them, if necessary, for a few days. Avoid over-watering them until well started into growth. Too much water given newly potted plants often does them harm. Keep the soil moderately dry for a time after the first watering. Potting soil should be fairly dry; it should never be used when in a wet, sodden condition.

Resting Plants.—I have a plant here that is undergoing a more *decided* resting period. It is a fuchsia that was put out of doors in the shade in the summer and brought indoors about the middle of September before frosts; it was placed in the cellar and kept moderately dry at the roots, and the tops sprayed occasionally. The other fuchsia plant I have here, which is just commencing growth, was in the same condition a few weeks ago. On removal from the cellar the young growth

Palm (*Kentia Belmoreana*). One of the best varieties of palms for a house plant.

Begonia argentea guttata. One of the best varieties of begonias for a window.

of last year was pruned back about two-thirds and the plant given more water at the roots; the tops were then sprayed and the plant placed in warmth and light. When it showed signs of growth, it was taken out of the soil and re-potted in sandy soil, into a smaller pot, and in a few weeks, when well started it will be potted into better soil in a pot of the original size. March or April is the best time to start old fuchsia plants. Fuchsias like partial shade at all times, and particularly when in flower. It would not be well to treat Asparagus plants so severely as this when resting them.

Old crysanthemum plants, for instance, can be kept over winter in a cool window or light cellar and partially rested during that time. These should be taken out and divided into small plants in the spring to make plants for the following season. This treatment prevents the plants from getting too large and cumbrous. The soil in which they are grown should never be too dry during winter when *partially* resting. Geraniums and salvias can be kept over winter in the same way.

MEMBER: What is the cause of a Calla Lily failing to develop its flowers?

ANSWER: Possibly the plant has been allowed to become too dry at the roots after being started into growth following the summer resting period. The dry atmosphere of the house, or gas fumes, will sometimes cause the flowers of the Calla Lily to go off in the way described. The Calla Lily likes a rich, friable, open soil, a moist atmosphere and plenty of water when growing, and the leaves should be frequently sponged or sprinkled with clear water.

Watering Plants.—Water newly potted plants well at first. Then withhold water until the soil commences to look dry. When plants require water give them

Begonia manicata aurea. One of the best varieties for a window. Leaves beautifully marked and spotted, and of a thick, leathery texture.

sufficient to moisten all the soil so that the water runs out at the bottom of the pot. Use tepid rain water if possible for house plants in winter. Cold spring water or well water is not good for plants. If well water is used, it should be warmed to about the temperature of the room before using.

Summer Treatment of House and Window Plants.—Almost all house and window plants are benefited by being placed out of doors in partially shaded position from about the middle of June until the end of August. The pots should be placed on a piece of slate, or have an inch or so of coal ashes under and around them to keep earthworms out of the pots. A little air-slaked lime sprinkled under

the pots is also beneficial in keeping away earthworms. Palms, rubber plants, and similar house plants are specially benefited by this treatment. The plants should be sprayed two or three times a week with clear water in very hot weather and the soil at the roots kept moist but not sodden with water.

The following are particularly adapted for house decoration or may be grown as window plants.

Plants Suitable for House Decoration.

Palm, Kentia Belmoreana.
Palm, Kentia Forsteriana.
Palm, Phœnix reclinata.
Palm, Phœnix rupicola.
Palm, Phœnix dactylifera (Date Palm).
Palm, Cocos weddelliana.
Palm, Latania Borbonica (Fan Palm).

Asparagus plumosus. A graceful, enduring house or window plant. The plant shown has been growing in a window for upwards of five years.

Aspidistra lurida variegata.
Farfugium grande (Leopard Plant).
Pandanus utilis. Pandanus Veitchii.
Dracena indivisa. Dracena australis (Cordyline).
Araucaria excelsa (Norfolk Island Pine).
Sansevieria zeylanica (Bow String Hemp Plant).
Ficus elastica (Rubber Plant).
Asparagus plumosus.
Asparagus Sprengerii.
Ferns—Nephrolepis Bostoniensis.
Nephrolepis Whitmani.
Nephrolepis Piersonii, and other varieties of these ferns.

Flowering Plants Suitable for the Window.

Geraniums.—Single flowering and variegated leaved varieties are best for windows in winter. Fragrant leaved geraniums are also useful.

Begonias.—B. argentea guttata, B. manicata aurea, B. Paul Bruant, B. Pres. Carnot, B. incarnata granditlora, and B. Weltoniensis (for summer flowering), are good varieties of these plants for the window.

Tuberous-rooted begonias are for summer flowering only, and should be dried off and rested during the winter.

Fuchsias, Calla Lily, Pelargoniums, Impatiens Sultani, Chrysanthemums, Azaleas, Primula sinensis, Primula obconica, Anthericum picturatum, with a few pots of winter flowering bulbs, such as Roman and Dutch hyacinths, narcissi, tulips, and a pot or two of freesia bulbs will make a good list from which to select plants for winter and spring gardening.

Begonia incarnata grandiflora. A grand Christmas-flowering Begonia

Primula stellata (Star Primula). A new type of the Chinese Primrose. A good variety for a partially shaded window.

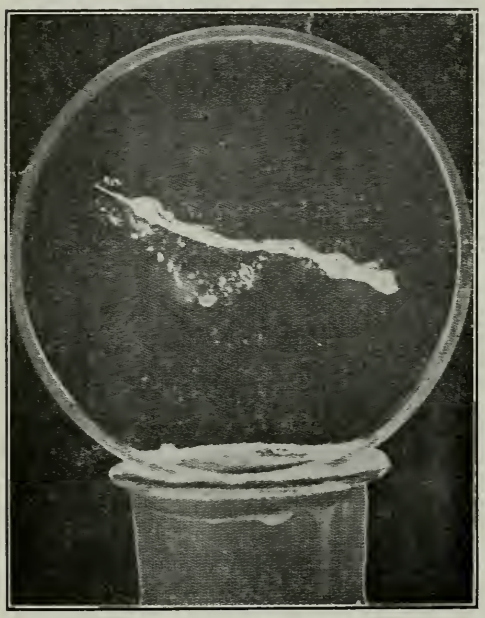
The Tradescantias (Wandering Jew), make good plants for a hanging pot or basket for the house. German Ivy and the Ivy-leaved Geraniums are especially good for training on small ladders or trellises. The Asparagus plumosus is one of the best plants for window trellis work.

WOMEN'S PART IN THE PURE MILK PROBLEM.

By Miss Laura Rose, Guelph.

Great improvements along many lines have followed in the wake of increased population. Water, lighting, heating, ventilation, and sewerage systems have added much to the comfort and health of the people, but the conditions under which our general milk supply is furnished have not improved in the same ratio, nor have they received the same serious thought and attention. A visit in the winter to a number of cow stables is convincing proof of the truth of this statement.

Despite the fact that scientists are devoting much time and thought to investigating dairy problems and difficulties, the standard of purity of our milk is still low. It will remain so until we women rouse ourselves and do our part toward its betterment. We are shockingly indifferent about the milk which enters our homes. We consider ourselves happy and fortunate if we have absolutely nothing to do with it on the farm. I do not advocate, nor ask, that the women do the milking, but I do say that, when they do it, the milk cannot help but be purer, for women have higher ideals of cleanliness than men. Her hands and clothes are usually cleaner, and she sees that the cow and, especially her udder, is clean.



One hair from a cow, planted in nutrient jelly. The white spots are colonies of bacteria, and each colony is the progeny of a single germ on the hair.

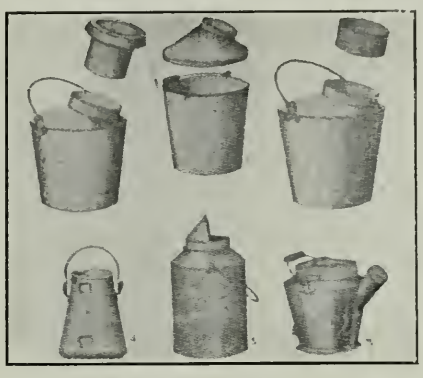
The effect of temperature on the keeping of milk. At *a* is represented a single germ; at *b* is represented the progeny of this germ in 24 hours in milk kept at a temperature of 50° Fah.; at *c* is represented the progeny of the same germ in 24 hours if the milk were kept at 70° Fah. At 50° the multiplication was fivefold, at 70° it was seven hundred and fifty fold. (After Conn.)

The dairy industry has suffered since women have withdrawn themselves from the cow stable. While it may not be woman's place to milk, it is her place to see that it is done in a cleanly manner. She should see that the men are provided with some kind of milking suits and also that these suits are washed when necessary. A long, loose coat, made of cotton or linen washing material, is the handiest to slip on and off. The tails of the coat can be brought around over the knees and protect the trousers.

The flanks and udder of the cow should be wiped with a damp cloth to prevent dust and hairs getting into the milk. The woman's part is to provide the cloths and keep them in a clean condition.

We know that the first streams of milk from each teat is swarming with bacteria of a very bad kind if the cows have been lying on a dirty floor. These first streams are better milked into a small dish than into the milk pail. Perhaps the young man you have hired has never studied anything about bacteria, and has no idea how easily milk may become contaminated through a little carelessness. Your

work is to instruct him what to do. Too often we are so perfectly content with the thought that we do not have to do the milking, that we have no concern how it is being done; yet we reap the sad results of carelessness in that the milk and cream are bad flavored and sour so quickly. Perfectly pure milk, if unexposed, keeps sweet for days. The hooded pail, instead of the wide spreading one, is another improvement costing but little, that the woman on the farm might be instrumental in establishing. This form of pail prevents much dust from dropping into the milk and at every point we must guard against the introduction of foreign matter. Each particle of dust, each hair, is laden dith bacteria. The dirt we see is really the least harmful. It is that which is washed off into the milk which does the injury.



Samples of milk vessels which overcome to a large extent the contamination of milk by dust and particles of dirt and hair falling from the cow's body.

It surely is the woman's part to see that the separator is thoroughly washed each time it is used, and to have the cream cooled by setting it in cold water just as soon as it is separated. That these two things are sometimes neglected accounts for the bad flavors in cream and butter.

Heat and cold are the only means that should be used to preserve milk. If the milk can be quickly cooled to below 50 degrees F. there will be little danger of it going sour within a reasonable time, unless it has been badly handled. Should there be any suspicion that the milk is not right, it should be heated to 175 degrees F. and then quickly cooled. This practically destroys all germ life. Heat does not make bad milk pure, but it checks bacterial growth and keeps it from souring for some time.

In towns and villages all sorts of receptacles are placed on the door-steps or in the porches, awaiting the call of the milkman, and in the meanwhile collecting dust. Do not wonder if the milk from such vessels is off in flavor, but do not blame the milk man. Milk should be kept in a clean place and, if possible, kept covered. If held in a jug, a piece of clean white cotton should be wrung out of cold water and placed over the top and set in a cool place.

The longer I am associated with dairy work, the more convinced I am that the atmosphere the milk comes in contact with has much to do with the good or bad condition of the milk. If we are to have pure milk, the air the milk comes in contact with must be pure. Men are not apt to realize the importance of clean air. They clean out the stables and put down hay during the milking hour, never

dreaming that the odors from the manure and the hay dust are carried into the pail by the fast descending streams of milk. This is one of the chief reasons why so much milk has the "cowy" odor and taste in winter. We women must complain more bitterly of just such milk. We must say it is scarcely fit for human food, and neither it is. We are to blame in that we do not find more fault, and the *we* includes both the women on the farm and the women of the town. We get no better milk than we demand or are willing to take. If the meat brought to the door were tainted, or the bread sour or under-cooked, we should not hesitate a moment in returning or refusing to accept such food products, but we take milk which is far from first quality and say nothing about it.

It is the women's part in this widespread movement for pure milk to complain if the milk is not good and to make enquiries where the best milk may be obtained. Out of regard to the family health, a person is justified in investigating the source of the milk supply, and especially where babies and invalids are in the household.

A milkman well dressed for his work and carrying a sanitary pail.

If extra care is given to produce pure milk, we must be willing to meet the extra cost.

The key-note which I should like to strike the loudest is our apathy in relation to the quality of this most important of all foods—milk. We must rouse ourselves. Reforms of any kind are brought about by an earnest dissatisfaction of present conditions and a sincere effort to better them.

DANGERS OF MILK.

By Dr. Helen MacMurchy, Toronto.

I appreciate very much the opportunity I have of speaking to you upon this subject. Rudyard Kipling in speaking to medical students in London a few weeks ago said to them about the great profession that they were entering, "It is required of you all in all time of fire, famine, plague, pestilence, battle, murder, and sudden death, that you report for duty at once, that you go on duty at once

and that you stay on duty until your strength fails you or your conscience relieves you, whichever may happen first." No one can say everything every time he speaks. Rudyard Kipling did not forget when he said those words so truly and well, that there are certain problems and certain public dangers which call us on duty at once the moment that we enter the profession. We report for duty on these problems every day of our lives and I see no prospect in the present generation but that we shall continue to report for duty at once on those problems every day of our lives.

Now two of these questions are, "Why do so many babies die in Ontario?" and "Why do so many babies and boys and girls and youths and maidens and people in the middle age of life and others die of tuberculosis in Ontario?" The ordinary death rate throughout the Province is something like fourteen per thousand. But take the little children born in 1908 and the death rate in a thousand new born babies is not fourteen per thousand: it is ten times that per thousand, 146 per thousand. Every doctor these days is thinking about that problem and feeling we must do something about it. About ten times as many babies die. Why? It is not because the baby is weaker—you will all bear me out that it is wonderful what they will live through. The explanation is really in the child's food. That is the conclusion that all medical authorities have come to and that is why we are interested in milk, and that is why I want to speak on the dangers of milk. I know if you had your way the milk would be cleaner and safer and a large number of these infants would be saved. When a mother who had lost a child had said to Dr. Osler that she could not understand why Providence had taken her baby away, he replied, "Madame, Providence had nothing to do with the baby's death, it was dirty milk." It is dirt that makes milk unsafe for babies. That is a magnificent exhibit Prof. Edwards has prepared, showing how milk is contaminated. Dirty milk is dangerous milk and we must have some way of keeping our milk clean.

I want to say something about the other subject—Tuberculosis. On the sixth of November last my telephone rang and the voice out of the distance said, "Is that Dr. MacMurchy?" I said "Yes." And the voice said, "Doctor, you are interested in pure milk." "Yes," I said, "I am indeed." "Doctor, there is a cow out here you ought to see." I said "I will go out and see it this afternoon," and I went out to call on a cow in the afternoon. (Laughter.) And I took with me a photographer and when I got out there the man had on a clean linen jacket, and he took me through a clean place, the floors were clean and everything was all right. The cow was hung before my eyes in two pieces in this place and I looked at it and said to this man who is a government official—I will not give his name—"I thought you would show me a cow alive. Sometime when you have a living cow which is in this condition, will you send for me?" He said, "It would be pretty hard to do that. Sometimes we suspect it." I said, "Did you suspect this?" This man is an expert who sometimes examines one hundred cows a day for the purpose of seeing whether they are fit for food. He answered "No." As I looked at it the whole of the thorax and the whole of the lungs were covered with little points very much like the white head of a pin, and I knew they were the tubercles of tuberculosis. The lungs, abdomen, intestines, liver and even the heart were full of these little pin points. Now that animal looked in such good condition when alive that you would think she was all right. I asked the man where this cow came from and he said, "I do not know just the name." I said "I do not want the name, but was this cow giving milk in the Province of Ontario this week?" and he said, "Yes, and what is more this is the third cow we have

tanked this week in this place." I said, "What do you mean by tanked?" and he said "I mean putting it into the tank to be used for fertilizing afterwards." I said "I want to talk to you more about this," and he came up to my office a short time afterwards and said, "This is a kind of a white day with us, we have not had a single cow condemned. I have examined 100 and I did not have one showing tuberculosis." I asked him if that did not happen often and he said, "No, not often. I see tuberculosis every day."

I am not an alarmist and I hoped that there was not tuberculosis in Ontario. We did not know really whether there was or not. I wonder if those three cows tanked in one week, were the only cows that had tuberculosis in the Province of Ontario.

Now it is very well to point out the danger. How can it be remedied? that is the point. We can remedy it. In Denmark the Government took hold of this question and they arranged that every cow that was found to be tuberculous should be slaughtered. That is what they do in Denmark. The Government pays the owner for every cow that is found having tuberculosis and in that way there is not any tuberculosis among cows in Denmark.

But there are two other ways by which this can be managed. I was encouraged when a farmer drove me out to see his cows and he said, "I try to treat my cows like myself. I always have my window open at night and I see that the cows in my stable have fresh air too, and I know they need to be taken out of the stable every day for a little fresh air." Light and air and good food and above all proper ventilation in the stables and keeping the cows outside as much as possible will prevent tuberculosis. We want to know whether there are cows affected with tuberculosis in Ontario. We do not believe in the ostrich's method of putting its head in the sand and not seeing the storm. I know you want to understand exactly about the state of affairs in your stables. There is a simple method, what we call the Tuberculin Test, and it can be performed by any veterinary in a short time and for little expense, and the Dominion Government has agreed to supply the tuberculin free of charge. And it seems to me, if the Dominion Government gives the tuberculin, the Ontario Government might supply a veterinary surgeon and everyone who wished could have his cows examined and know whether they have tuberculosis or not.

In many cases we say, "Where did this patient get tuberculosis?" And no one can answer. We are beginning to think some tuberculosis comes from the milk. It is only this year we have felt certain of that. New work has been done and we have found out that tuberculosis reaches the lungs by way of the stomach and intestines. We have within this year in medical laboratories traced tuberculosis to the lungs by way of the stomach and intestines and we have reason to suppose that where it developed at twenty-one years of age it may have lain dormant since childhood. The milk supply has much to do with health.

THE CARE OF MILK.

By Professor Dean, O.A.C., Guelph.

Two years ago I had the pleasure of giving an address on the care of milk to your Convention. I dealt at that time with the cow, her feed, her care, the importance of cooling milk, of keeping it clean and sending it to the consumer in the best way possible, and for ten minutes now I have the pleasure of speaking to you on the subject, "The care of milk from the consumer's viewpoint."

There is great need to-day for education among the milk consumers. Milk producers have their duty to perform and many are doing it to the best of their ability, but the consumer of milk also has a duty. The education which I think is necessary for the consumer is along two special lines: First, as to the food value of milk, which will be dealt with this afternoon by Prof. Harcourt; second, how to get the most out of the milk and to eliminate the dangers from the consumption of milk. The danger part of it will be dealt with by Prof. Edwards. The consumer should bear in mind that milk is a food easily contaminated. The most valuable of all foods which any person can buy, but so easily spoiled. Now I realize the difficulty of speaking on this subject because most women say, "What does a man know about it anyway?" But we men are patient beings, we have also great perseverance; and though we may be discouraged at times, we must ever keep preaching with reference to dairying the gospel of dairy truths.

I will summarize what I have to say to you.

First: The milk when delivered to the consumer should be left as far as possible in the original package. Now most women when they get a bottle of milk, the first thing they do is to empty it into a pitcher and it is left in the refrigerator or on the table or any place which happens to be convenient. That is radically wrong, assuming that the original package is clean and suitable for storing the milk in, and if it is not clean and suitable for storing the milk in, it ought not then to contain milk at all. I have something which is new in the line of packages of milk, made of paper sterilized, lined with paraffine wax, in which the milk is put and in which it may be left for several days without any danger of contamination. This I think is one of the greatest improvements which have been made recently with reference to a package for holding milk. Then this package when emptied is burnt, not returned to the producer or to the distributor or the dealer, and in that way you eliminate one of the great dangers in handling milk, especially from a place where there are contagious diseases of any kind. I look for a rapid development in the production and use of the paper milk bottle.

Second: If the milk must be emptied from the original package it should be kept covered, not put in an open pitcher or vessel of any kind. Now when we expose the milk to the air we are exposing it to all kinds of danger, for the oftener the milk is emptied from one vessel to another the greater is the danger of that milk becoming spoiled. It should be kept as cool as possible. At this time of the year there is no difficulty in keeping milk cool, but in summer there is often difficulty, and the housewife who is responsible for the milk after it is delivered should keep the milk as cool as possible, because that is a favorable condition for keeping the milk sweet and in the best possible form for human consumption.

Next, if the milk has not been pasteurized and has not been produced in a cleanly manner, as is being done in the production of certified milk, then the milk ought to be pasteurized at the house. I pasteurize the milk at home when I keep "batch," as I sometimes do when my wife is away. When I want to do it, I take a coffee-pot made of porcelain, put it on the gas range, start the fire and I stir the milk until it is thoroughly pasteurized. I always cool it down at once to a temperature at which I can make use of it. You women who know about double boilers could do better than that. If you cannot do it any other way simply set a tin pail on top of the stove and stir the milk until you pasteurize it, keep it at a temperature of 160 degrees. That makes ordinary market milk safe to use, and the ordinary market milk as delivered in our towns and cities is in many cases unfit for use.

The next point is that this milk if it is taken to the sick room should on no

account be returned to the general dining room or used by other members of the family until it has been pasteurized. A great many diseases are undoubtedly spread through carelessness on that point.

If we cannot afford to throw the milk out, and many of us cannot, then it ought to be pasteurized before it is used by any other person or returned to the general supply. And then where milk is taken out and put on the table and not all used it is very often emptied from the cream pitcher into the general supply and then it all turns sour in a short time. Why? Because the atmosphere in the dining room was favorable for the milk to spoil. It should be kept separate and not put in with the general supply.

My last point is, "Buy good milk." Be willing to pay a good price for it. Milk at ten cents a quart is the cheapest food that goes into the house either for grown up persons or children. Personally I prefer a good bowl of bread and milk at night to anything else I may have, and when I keep "batch" I usually have bread and milk twice a day, and I think there is no more healthful food. See how much worry you will be saved, and men would have far better digestion. The average man eats too much and eats the wrong kind of food, and if I were making up a man's ration (I would like to give the women a lecture on what a woman ought to know from a man's viewpoint)—I would feed him at least three times a week on a bowl of bread and milk.

Pay a good price for milk when it comes into your house; treat it in the best possible way along the lines I have suggested and I feel sure that the amount which is expended on good milk will be the most economically spent money which you use for the purchase of food. (Applause.)

THE CHAIRMAN: I am sure Prof. Dean will make quite a hit in the Institute work if he remembers the advice of Josh Billings, "Consider the postage stamp, my son, its usefulness consists in its ability to stick to one thing until it reaches its destination."

BACTERIAL CONTAMINATION OF MILK.

BY PROF. S. F. EDWARDS, O.A.C., GUELPH.

I wish first to most heartily corroborate what Prof. Dean has said with regard to the precautions that should be observed in the care of milk. Of course the chief aim should be to keep the milk free from bacteria. Keep it free from impurities of every kind. But we cannot always control the producer, we cannot *protect* the production of the milk, and we have to adopt whatever means we can to overcome or offset in the best way we can the shortcomings of the producer; and Prof. Dean has very aptly told you some of the things which need to be observed in taking care of the milk after it reaches the household.

I will try to point out some of the ways in which the milk becomes contaminated and some of the precautions that the producers ought to observe in producing pure milk.

Containing as it does all the food elements necessary for the maintenance of life, milk is a very favorable medium for the growth of bacteria, and nearly all kinds flourish and multiply rapidly in it, the rapidity of growth depending almost entirely upon the temperature at which the milk is kept. We are unable to see these tiny organisms without the aid of a powerful microscope, but we are able to judge of their presence by the changes which they produce in milk when grow-

ing in it. Were it not for the bacteria present, milk would remain sweet indefinitely. This may be shown by heating milk in a glass vessel until all bacteria present are destroyed, having previously provided means for preventing bacteria in the air from subsequently getting into the milk. This is accomplished in our laboratory by plugging the openings of our glassware with cotton wool, which, so long as it remains dry, effectually prevents bacteria from passing through into the milk.

All the changes, then, which milk undergoes on standing, are wrought by bacteria, one species producing one change, another species another change. The ordinary souring of milk is caused by the lactic acid bacteria. These are the ones the creamery man desires in milk and cream. Without them he would be unable to ripen his cream, or to give his butter the fine flavour, aroma, and keeping quality which constitute a first class product. Other species of bacteria produce the putrefactive changes in milk, characterized by the vile odors and flavors in ordinary milk a few days old. Still other species may produce ropiness, turnip flavor, excessive gas, alcohol, oily or fishy flavors, color, bitter flavor, etc. Disease-producing bacteria may gain access if the animal or any persons handling the milk are diseased. I will discuss briefly the sources of these contaminations of milk.

The Cow.—The first few strippings, commonly called the fore milk, may contain from 20,000 to 100,000 bacteria per c.cm. (about twenty drops). A few bacteria find their way into the opening of the teat, multiply rapidly in the few drops of milk left at the close of milking, and when the next milking begins are carried into the pail with the first few streams. By milking the fore milk into a separate vessel the main bulk of the milking would be kept free from these bacteria.

A single hair from the cow may carry several hundred bacteria, and manure is teeming with them. Bits of straw, dust from the animal and from the milker dislodged during milking carry great numbers of organisms into the pail. Most of the bacteria from these sources are of kinds able to produce putrefactive changes in the milk, resulting in the bad flavors and odors with which we are all more or less familiar. Most of this dirt may be kept out of the pail by the simple expedient of wiping the flanks and udder of the cow with a damp cloth just before milking is begun, thus causing the dust, hairs, etc., to adhere to the animal instead of falling off into the pail. Ninety-five per cent. of the bacteria from these sources may be kept out of the milk in this manner. The milker should have clean clothes and clean hands, and should be free from suspicion of disease of any sort.

The air of the stable is another important source of bacteria in milk. Straw and feed of all kinds carry many bacteria and if feeding or bedding down of the cattle is done just before milking much dust, with its attendant bacteria, is thrown into the air, only to settle into the milk pail during milking. Dry feeds naturally contribute more largely to contamination of milk than do moist feeds. Contaminations from these sources may be very largely avoided if feeding and bedding are done after milking, or else an hour before milking, thus giving time in the latter case for the dust to settle to the floor. In a number of determinations, it was found that, during feeding and bedding down, the number of bacteria falling into a twelve-inch pail per minute was 12,000 to 43,000. When bedding and feeding were done an hour before milking, the number was reduced to 500 to 2,000.

The various milk utensils also furnish their quota of bacterial contamination. If a few hundred bacteria are left in a milk can, either from improper washing or from wiping after scalding, these multiply rapidly when milk is again put into the can and help to hasten the souring. The number of bacteria per twenty drops in the first rinse water from a milk pan as ordinarily washed was found to vary

from 13,000 to 80,000, while the same amount from a properly washed can showed only 400 to 1,600. It is not sufficient to wash a number of cans, pour a kettle of boiling water into the first, and pour from this into the remainder, rinsing all with the same water. Each can must be thoroughly scalded, and not wiped with a bacteria-laden cloth, but simply turned up to drain. The ideal method of scalding is by live steam.

I have tried to show how undesirable bacteria get into milk during milking and subsequent handling. Ordinary fresh milk, less than one hour after milking may contain several hundred thousand bacteria per c.cm. Most of these can be kept out by observing a little caution during milking. If we have a clean cow in a clean stable, a clean milker, and clean utensils, we will have clean milk, and the degree of purity and cleanliness of the milk will depend exactly upon the degree of cleanliness observed in all the different operations in securing that milk.

MILK AND CHILDREN.

By James Acton, Toronto.

I am in a somewhat delicate position this afternoon, although by no means a delicate man. For the ordinary layman to follow those who have given this subject such careful and such scientific thought, requires a confidence that I am not sure I possess. However, this seems to be a layman's age. We are having laymen brought out in religious and spiritual matters and I do not know, speaking apart from myself, but what it is a good thing to get laymen and laywomen interested in some of the scientific questions.

I am to speak to you for a few minutes this afternoon on milk in relation to the baby, so that after all it is scriptural, because Paul speaks of milk for babies.

I have always been interested in babies; they say you never can make a mistake if you pick out a stout bald-headed man, in saying that he is fond of children.

This is a generation when we can safely say babies are more appreciated than ever before. I remember some years ago reading an incident which I remember above all others concerning Abraham Lincoln. He was sent once when a young lawyer to visit another lawyer's office in the town to give a report as to this man's financial standing, and he said, "I visited So-and-So and I found in the office—one desk, two common chairs, cuspidors, a hole in the floor, and I found he had a wife and one baby, which I judge would be worth $20,000." That was Lincoln's estimate of the value of a child to a lawyer, and I do not think he was under the mark. Our youngest baby is seventeen years of age, but we have never been without a baby and we have somebody else's now. A week or so ago, I came out of a church and a lady said to me, "Do you remember advocating in your paper, the taking of children into homes instead of dogs?" and I said, "I do, I am very strong on that point because we have had a little fellow since he was six months old." And she turned to me and said, "This little girl we took into our home a year ago, and she has been one of the delights of our home, and what joy has come with the bringing in of this little girl." And the value of childhood is greater in the world than it ever was before. Why, even France is foremost in its efforts to bring up the average birth rate from the point at which it is to-day to something better. It used to be when they discussed the question of poverty in the nation that somebody would say something about there being too many chil-

dren. I remember reading a story about an Irishman, and the doctor called him in to look over three very fine triplets and Pat looked from one to the other and then finally he says, pointing, "I think we will keep this one." That was the thought that a great many people had with regard to children, that they were more or less in the way. To-day people value children, and the nation above everything else values childhood. If I thought it was within my province, I would like to say something in regard to the birth rate of this country, because we have had staring us in the face the fact that the birth rate is only twenty-one per thousand in this Province, while in the Province of Quebec it is thirty-five.

It is estimated that in the United States there are about 225,000 children die before the age of five years. In this country, I have not seen any figures, but I think it is a safe estimate that somewhere between 20,000 and 25,000 children die every year before they reach the age of five. It is claimed by eminent authorities that at least one-half of these deaths could be avoided. In other words we have to face the fact that within the Dominion of Canada there passes away every year, of children under the age of five, somewhere in the neighborhood of 12,000 which could actually be saved. A doctor says that of 2,000 children who died, when he looked at the history of these cases, he found that four-fifths of them died from imperfect feeding, causing troubles of the intestines and stomach. Another authority states that out of 943 cases, nearly 90 per cent. of them died from imperfect nourishment, from bad feeding. In the city of Birmingham, the health officer in 1905 made a report that out of 178 cases, 135 were of children who died from imperfect feeding. This subject of 10,000 preventable deaths of children ought to interest every woman. Now the first thing that we need to lay down in this propaganda of life saving for children, is that the safest food for children is the mother's breast. One of the statistics that I have here states that only three per cent. of the number of deaths could be traced to mothers who had nursed their own children. It is a wonderful provision of Providence; it is found in cattle as well as human kind, that the milk that comes from the mother is practically pure. The mother may be diseased. Why, where mothers are affected with contagious diseases, the doctor seldom thinks of taking the child away from the mother. The mother will not transfer disease to the child while she is nursing it. It is a provision of nature that the milk reaches the child in a pure uncontaminated form. The first thing we need to emphasize is that the safety of the child depends on being fed as much as possible by the mother. It would seem that this in a way not entirely possible; I have heard statements made in regard to mothers not nursing their own child, that it has been their unwillingness to nurse their child. I heard an eminent authority say that in 2,000 to 3,000 cases he found a very small percentage of women averse to nursing their children. The change in conditions of life have made it impossible for women to provide the child with that nourishment which the child needs, so in a large number of cases it means that they have to resort to artificial nourishment.

To come to the milk question, the nearest milk to the mother's milk is the milk of the goat. In some of the cities of Europe they drive the goats about from door to door and milk them into bottles and other receptacles, sometimes into the child's mouth. In this country, the use of goats for that purpose is practically out of the question and we are faced with the question of using ordinary cow's milk. I need not touch upon the question touched upon by Prof. Edwards, but let me point out this fact, that the cow's milk differs very materially from the milk of the mother. The milk of the mother and of the goat and cow as far as solids are concerned are practically the same, but in regard to what is called the

casein, it is well to remember that if you curd the cow's milk it forms into larger particles than the mother's milk, so that even perfectly pure milk, if given in its natural form to children, will lie on their stomachs, get into a large curd on the stomach of the child: and when you consider the difference there is between the stomach of the child and the stomach of the calf or cow, you will see how unsuited the milk of the cow is for the child. The calf or cow or goat has four stomachs, and the milk is taken from one to the other until it is thoroughly digested. The child has only one stomach, and when milk is taken in the natural state, it is not able to digest it.

We became deeply interested in this question of milk for infants this summer, and in the course of our investigations and observations we found that in Toronto in the three summer months there were somewhere like 550 deaths among children. In the cold months the average was only about 100 per month. There were about fifty additional children dying supposedly from the heat each month, but it was really from the effects of the impure milk. We opened two pure milk stations and we set about providing pure milk for these pure milk depots, and we brought the milk there. We sought out a farm where we could be absolutely sure of healthy cows, feeling that proper milk methods should be followed. Of the first shipment from the depot, we had samples examined. We took four samples out of the yard to find out how it compared with what we were giving and what was ordinarily sold in the yard. Now the milk that we were giving from first class conditions was not as perfect as we afterwards secured. We found that in a cubic centimetre there were something like 65,000 bacteria: one had 3,400,000: the second, 4,500,000: the third, 7,800,000: and of the fourth, the Bacteriologist said it was so prolific that it was not worth counting, so that the children were being fed on that impure milk and it was considered pure milk under 100,000. But even our milk was higher in bacteria count than it should be. This little experiment has opened up the whole question. I believe in other cities in the Dominion of Canada there is missionary work that the women interested could do. In cities of at least 10,000 inhabitants there ought to be a pure milk station. You ought to see to it that some means is secured of getting into your city, milk that is absolutely free from contamination. It is possible, we have secured it in Toronto, and next year we are going to try and see if we cannot get an ordinary farm within ten or fifteen miles of the City of Toronto. I have heard this cannot be done without an outlay of a tremendous amount of money. We will try and get a farm to supply us with twenty to forty gallons of pure milk, sold on the spot and brought into the city on ice and in this way served to the children. We made a mistake this year; the milk we gave them was a little too strong for children. We found the butter contents in this was such that it was not good for the children. We hope to modify this next year so that we will be able to supply the milk diluted.

One of the greatest satisfactions I have had in my life has been to meet some of the mothers during the past summer in Toronto and have them tell me, "This little girl would not have lived if it had not been for your milk." If that can be done in a very humble way and with very imperfect means, in a very hurried manner, because I think it was undertaken within two days on the suggestion of Mr. James, if this can be done with so imperfect means, what could be done after a campaign through the Dominion of Canada. 10,000 children die in this country who could be saved if they got the proper food. (Applause.)

FOOD VALUE OF MILK.

By Prof. R. Harcourt, O.A.C., Guelph.

If the true value of milk as a food were more fully appreciated, it would be used much more freely. To be really valuable, even safe, it must be clean.

Milk contains all the ingredients required to nourish the body; that is, it furnishes the materials which build up the body and keep it in repair (protein); also those which supply it with fuel to keep it warm, and energy to do its work. (carbohydrates and fat).

The protein, fat, and carbohydrates may be oxidized or burned in the body, and the heat which they will produce is frequently used as a basis for comparison of foods. Unfortunately, this does not give us an entirely satisfactory basis for comparing the nutritive value of foods, for the protein is absolutely essential for the the formation of flesh, and yet has a low fuel value. Taking all things into consideration, however, possibly a statement of the amount of energy a food is capable of producing is the best basis upon which to compare the nutritive value of foods, and in order that we may have some measure for expressing the amount of heat a given substance is capable of producing, the "calorie" is taken as a unit. Roughly speaking, a calorie is the amount of heat required to raise the temperature of one pound of water four degrees Fahr.

It has been found that a man requires a certain amount of protein, fat, and carbohydrates in his daily food, and that these ingredients combined should furnish approximately a certain number of calories of heat. Any food which will furnish all the nutrients in the right proportion to supply the needs of the body in a digestible and palatable form, that is not too bulky, and at a moderate cost, is a complete food. Milk is frequently spoken of as a complete food. It is to the infant, but for the adult it does not contain enough carbohydrates, and is too bulky. Wheat bread more nearly fulfills the requirements, but it is a little deficient in protein. Possibly oatmeal comes the nearest to being a complete food for the adult.

A varied diet is, of course, necessary, but we should know which of our common foods furnish the most protein, fat, and carbohydrates for the least money.

The accompanying table has been prepared to show the actual amount of food constituents which can be purchased for a given sum of money expended on milk, as compared with other foods. In this case, we have calculated the amount of proteins, fat, carbohydrates and the fuel value of a dollar's worth of several of the common foods.

It will be noticed that milk at six cents, or even at eight cents a quart is a much cheaper source of proteins than meats bought in the ordinary way. It is not equal to meat bought wholesale, as beef by the quarter, but does give us more than twice the amount of energy that could be got from sirloin steak, veal cutlets, etc.

Skim milk at ten cents a gallon is possibly the cheapest source of animal protein that we have. Too often we think of milk as aluxury which we can only take in limited quantities, not realizing that after all it stands among the cheapest foods derived from an animal source.

When comparing milk with the cereals, we find that it is not equal in fuel value, but it is evident from what is given in the table that there is a good scientific reason for the use of bread and milk, and that these two would form a very cheap and nutritious diet.

PROTEIN, FAT, CARBOHYDRATES, AND FUEL VALUE OF A DOLLAR'S WORTH OF EACH FOOD.

—	Price per lb.	Refuse %	Protein. lbs.	Fat. lbs.	Carbo-hydrates. lbs.	Fuel Value Calories.
Milk	6c. quart	.....	1.38	1.69	2.21	13,809
"	8c. "	.....	1.04	1.27	1.66	10,402
Skimmed milk	10c. gallon	.....	3.40	0.30	5.10	17,070
Butter milk	10c. "	.....	3.00	0.50	4.80	17,362
Butter	25c. pound	.....	0.04	3.40	.....	14,422
Cheese	17c. "	.....	1.63	2.16	.24	12,593
Beef, fore quarter	6c. "	18.7	2.41	2.91	.....	16,762
" hind quarter	8c. "	15.7	1.92	2.29	.....	13,235
" flank	8c. "	10.2	2.12	2.37	.....	13,944
" sirloin	18c. "	12.8	0.92	0.90	.....	5,509
Veal, cutlets	15c. "	3.4	1.34	0.50	.....	4,612
Mutton chops	16c. "	16.0	0.84	1.80	.....	9,158
Lamb, hind quarter	18c. "	15.7	0.92	0.90	.....	5,509
Ham, smoked	18c. "	13.6	0.79	1.85	.....	9,276
" " and cooked	30c. "	.....	0.67	0.75	.....	4,405
Eggs	25c. dozen	11.2	0.71	0.56	.....	3,853
White bread	2½ lbs. 10c.	.....	2.10	0.50	12.2	28,710
Rolled oats	7 " 25c.	.....	3.50	1.90	20.0	51,730
Farinas	6 " 25c.	.....	2.30	0.24	18.7	40,070
Potatoes	90c. a bag.	20.0	2.18	0.10	15.6	33,492
Flour (fall wheat)	2c. pound.	.....	4.75	0.04	38.0	81,087
" " "	2⅔c. "	.....	3.80	0.03	30.4	64,868
Beans	5c. "	.....	3.90	0.54	12.0	31,000

CONVENTION ADJOURNS.

MR. PUTNAM: I think we can congratulate ourselves upon the success which has attended this convention. We do not like to offer bouquets to ourselves, but I think we will all agree that the subjects which we have listened to and the discussions we have had and the question drawer have all been of help, and I trust we will all go back and do better work during the coming year than has been done in the past, and I trust that you will not forget what I said to you once or twice before—that we look to the officers in the different counties to carry on the work in their districts, to canvass the territory and see if there is anything for them as district officers to do to further the interests of the Institute, not only in their own immediate neighborhood, but in the other portion of the riding where possibly the women have not the privileges which you enjoy in your own localities. We must close at once and all I can say is God speed and help you in your work for the coming year.

SELECTED PAPERS AND ADDRESSES.

ASEPSIS IN THE HOME.

By John Lewis Meeker, M.D.

[Printed by courtesy of "Harper's Bazaar," New York.]

In this day every one feels that he or she is more or less acquainted with that ever-interesting topic of the omnipresent germ.

It is not the purpose of this article on asepsis and antisepsis, as pertaining to the home circle, to go into lengthy discussion of bacteria, their classifications and properties, and their deleterious or benevolent roles. Suffice it that bacteria, as we know them, are pathogenic (disease-producing) or non-pathogenic; and it is against the former that our best energies should be exerted in the home.

Germ life is everywhere present; the harm or the good it may accomplish depends upon the kind of bacteria, the degree of virulency, and the resisting power which it encounters. The housewife hardly pauses to think that the bread she kneads depends for its lightness upon a germ-ferment; that the curdling milk presents a simple illustration of developing micro-organisms, performing their normal functions in a pleasant nutrient medium—or, by the way, that that same medium is the ideal soil for the abundant thriving of typhoid, diphtheria, or tuberculosis.

The sparkling crystal-clear water teems with invisible life. The spot so carefully pared from the white potato is but a colony of infinitesimally small creatures, multiplying in almost incomprehensible ratio. The mould at the top of the loosened fruit-jar cover, the cloud in the bottom of the vinegar-cruet, the rancid smell of the neglected butter-dish, the damp, strong odor of the uncleansed ice-box, all tell the story of a life too small for ready realization, but which still plays its own very energetic part.

Many of these yeasts, moulds, fungi, and other low orders of life are harmless; the malignant varieties, on the other hand, await only favorable conditions of temperature, light, and humidity to become enlivened.

In this generation public health boards and the municipal authorities are endeavoring to regulate many things regarding household sanitation, as well as the articles of provender that come to the home. It is to-day less necessary for the housewife to scald her milk as a protection against the lurking pathogenic organism. For one thing, we have found that the overheating of milk destroys not only possible disease bacteria, but kills as well another germ growth known as rennet, which, far from being harmful, is a necessary natural ferment of the milk and plays a prominent part in its digestion.

For another, matters are now so regulated that milk is taken only from healthy cows inspected by capable agents, is handled in clean utensils, and is delivered in sterilized bottles, well sealed.

Plumbing, too, has been carefully regulated by laws compelling certain traps and measured pipes, properly exposed for ingress and egress of water; and, indeed, in most possible ways home sanitation has been looked after by the health boards.

But where their work ceases the housewife's responsibility begins; and to her I wish to mention a few of the things within her power, in the way of making home not only beautiful, but thoroughly healthful.

First, a word as to house furnishings. A moderate-priced rug on a shellacked floor is more sanitary, will look better, and, in the long run, give more satisfaction than the most expensive carpet. The former is capable of frequent removal to the best of all germicides—air and sunlight; the latter remains nailed down until spring to receive and retain with amazing tenacity the sifting, bacteria-laden dust of those who come and go: and, through periodical sweeping, to deliver portions into the air, for lodgment in the respiratory organs.

Then a plea against such things as the cluttered what-not, the fringed lambrequin, the myriad surviving worsted devices, the rope curtain, the slik lamp shade, the ornate candelabrum top, the tasselled upholstery. Every one of them is a dust receptacle their proper cleansing without ultimate destruction is almost an impossibility.

Again, the wall covered with beautiful tapestry has absolutely no standing, from the view-point of sanitation, with the truly germ-proof tinted whitewash. The bacillus diphtheria has been demonstrated to live unmolested and without food upon a silken thread for six solid months; covered with plebian lime, his career would have been a matter of minutes at best. Possibly as a compromise, the painted or the hard-finished wall, which may be wiped frequently, is desirable.

The bathroom with tiled floor and sides and modern open plumbing is, of course, ideal: but tiling is expensive and needs frequent repairing. A bathroom can be made sightly and wholly sanitary in the following manner: Over the unfinished wall, to a height of five or six feet, run a stretch of heavy burlap and finish it with two coats of good white enamel paint. This gives a wall surpassing tile in many respects; which is easily cleansed; which costs considerably less than tiling; and which neither cracks nor falls away with the settling of the building. Let the floor be covered with plain linoleum and the place be divested of boxes and unused medicines and stow-holes generally, and you have a room in every sense to be enjoyed.

Unless very frequent changing is possible, portieres and curtains, from the finest lace to cotton, are better omitted altogether. Consider the snowy whiteness of the curtain hung in October; observe its dinginess in May. Consider, too, that dust has worked the change and that dust is fairly synonymous with germ life—and some food for thought appears.

The kitchen and the laundry are places where the need for renovation and disinfection may not be ignored. One of the most annoying conditions is found in the common summer fly. The ubiquitous little creature carries everything from everywhere to everywhere else, with a long predilection for tarrying upon the exposed foodstuffs. The perfect household must be absolutely without him. His main highway is the kitchen entrances; and this calls primarily for tightly fitting screens for doors and windows, and an utter absence of all uncovered refuse matter. As another means of discouragement, the kitchen should be arranged with abundant facilities for ventilation and the carrying off of cooking odors.

For this reason, cooking upon an upper floor is very strictly sanitary, however unusual and unhandy in other ways. The vapors, greases, and fumes generally arising from the range are either to be drawn to the outdoor air or are to condense and settle everywhere within the kitchen. Such a deposit, slight as it may seem to the eye, furnishes a most excellent food for micro-organisms brought by the fly. Cooked food, to be sure, is free from bacteria—save, perhaps, in the spore form—but it is very far from being immune from reinfection through the bringings of the fly. Therefore give him battle, with preventive methods externally rather than by annihilative methods internally. Let the watchword be to *keep him out*

—and at once you may dispense with the covering of foods, the unlovely poison fly-paper, the too-musical buzz of the "sticky" variety, and the frantically swinging towel.

Water furnishes another germ entrance to the household and the human system. Much, naturally, depends upon the source. The average filter will hold back the refuse in the water, very shortly to become clogged with a bed of multiplying micro-organisms, which pass through the filter and render the very means of purification one of contamination. In many of the larger cities it is estimated that more than half the population are using, for drinking purposes, spring waters brought from an uncontaminated source. In the absence of such a practice, it is most advisable to boil and cool the water.

The familiar flat taste is avoided by half filling a large receptacle after cooling, and shaking or stirring so that all parts of the waetr may be exposed to air, for the flatness is due to the absence of air driven out in boiling. Water which has been raised to steam and recondensed is absolutely pure and wholesome, and lacks the flat taste of boiled water, for during the process of condensation it has reabsorbed a portion of its lost air. A small still as a household device would furnish a long-needed addition to every home, and could be sold at a reasonable figure. In a word, then, the germicidal treatment of water is best accomplished through high temperatures: even the dreaded typhoid, one of the chief menaces, while capable of life in a block of ice, succumbs very rapidly indeed to a temperature well below boiling.

To the endless variety of antiseptics, germicides, disinfectants, and deodorants upon the market and the latter-day craze for stamping as "antiseptic," or "sterilized," every conceivable article, from absorbent cotton and soap to beer and baby food, space forbids much attention. We have many good, standard disinfectants which can and should be used in the proper time in every household, and which are as essential to us as the ice-cap or the hot-water bag, but unhappily many of the best have their drawbacks. Formaldehyde, for instance, has a peppery pungence with as great an affinity to the mucous surfaces of the nose, throat, and eye as for anything else: and while it is invaluable as a fumigator after infectious disease, it is hardly fitted for general use. Carbolic acid possesses an odor both lasting and unpleasant; bichloride of mercury is corrosive to metals and a powerful poison; the fumes of sulphur are intolerable.

So through something of a list. In the widest field of household disinfection an aqueous solution of chloride of lime has yet to be rivalled. To flush the sink or closet, to sprinkle the floor, to freshen the atmosphere, it is pleasant and efficacious. While not expensive, it is easily destructible if left uncorked or exposed to sunlight; hence it should be purchased in small quantities.

But nature, after all, has given us the very best disinfectant for many purposes—the sun. Better to fade every rug and carpet than to exclude the daily thorough sun bath from your home. Where the sun remains the tubercle bacilli flee. Our helio-therapeutists have recently demonstrated much virtue in the solar rays as a health-restorer. The hollow cheeks and hollower chests of our tenement children, housed in stuffy gloom, tell the same story; the round limbs and bright eyes of the country youth tell the other side as emphatically.

Don't neglect sunlight, from kitchen to garret. Ventilate the cellar well. Ventilate every living and sleeping room; and remember, if you be economically inclined, that a house flushed with fresh, bracing air is heated much more quickly and at a lower fuel cost than one filled with heavily laden carbonic atmosphere.

The whole question, therefore, is possibly one more of a preventive campaign than anything else—the systematic avoidance of germ-breeding conditions and the killing off of such bacteria as may be present, through chemical and physical agents. Eliminate the dust-catchers, big and little. Let the cuspidor be consigned to the realm of unpleasant memories, and the newspapers and the odds and ends to the furnace fire. Remember that from the bacteriologist's point of view very nearly everything contains germs of one sort or another, and that all germs are capable of destruction; that chloride of lime and sunshine and boilin gwater are nearly always accessible; that ten minutes' hard boiling will free from bacterial life any substance capable of standing the operation—save only in the few classes of germs which sporulate, in which case the boiling should be repeated after twenty-four hours.

These are a few of the salient features to be met in household asepsis. A little caution, or rather precaution, in the matter is not unwise, nor does the accusation of "germ crank" by the sceptic confer an eternal stigma. It may be irritating to learn from the tongue of the doubter that grandmother died at eighty-seven without hearing of a germ. It is also as well to recall that grandmother, in nine cases out of ten, was unacquainted with flats and air-shafts and little rooms; that she lived, very likely, in a house exposed for a mile or so on four sides to air and sunshine; that unending pure breezes brought "the wash" in fresh and sweet, and unlimited scrubbing kept the floors in like condition; that for six months of the year she may have cooked in an out-door kitchen vegetables from which the new green smell had not departed. Grandmother had one room, the dismal horsehair parlor, from which light was excluded as if by religious teaching. She occupied that one apartment only for brief spells of cleaning at long intervals—and she lived to eighty-seven!

DISEASE GERMS.

By Miss Jennie Smillie, Sheffield.

It has been found by careful investigation that there are in the air numerous small organisms which we call germs or bacteria. They are about 1-25,000 of an inch in length and of course can be seen only through a powerful microscope. They are one-celled organisms and were at first thought to be animals. They are now generally said to belong to the vegetable kingdom, but there is no sharp line of demarcation between the lower forms of animal and vegetable life.

The distribution of bacteria is well nigh universal, they float in the atmosphere we breathe, swim in the water we drink, grow upon the food we eat and luuriate in the soil beneath our feet. The majority of bacteria are not harmful, but are indeed beneficial. There are only about thirty known bacteria that produce disease, and it is these disease-producing germs that are of particular interest to us.

Bacteria are classified according to their shape. Some are spherical in shape and are called Cocci, *e.g.*, the Pneumococcus which causes pneumonia. Some cocci are arranged in pairs, some in groups, some in chains. Rod-shaped bacteria are called bacilli, *e.g.*, the Tubercle bacillus which produces tuberculosis. Spiral shaped bacteria are called Spirilla.

Most bacteria reproduce by fission, that is, each germ swells out and becomes larger, then it divides into two equal parts and so forms two germs which after a time divide in the same way. This process goes on indefinitely, so that, where now there are only two or three bacteria, in a few hours there may be a hundred or more, that is if conditions are favorable to their growth.

There are several ways by which disease germs may enter the human body. They may enter through the respiratory system, that is, they may be breathed in with the inspired air and enter the lungs and air passages, but nature has provided against these little invaders and has placed in the nasal cavity very fine hairs which act as a filter and stop the bacteria on their way to the lungs. Only a very small proportion of them pass this filter and reach the lungs.

Disease germs may enter the body with the food we eat. They pass into the stomach where they meet with the gastric juice which acts on them and kills them—digests them just as it digests meat—but some germs may escape, go through the lining of the stomach, enter the blood and so go to all parts of the body and may produce disease.

Bacteria may enter the body through cuts or wounds of any kind and cause inflammation, suppuration, etc. It is to Lord Lister that the everlasting gratitude of the world is due for the knowledge we possess in regard to the relation existing between germs and inflammation, suppuration, etc., and the power to render wounds free from germs by the action of germicidal substances. He was convinced that inflammation in wounds was due to the presence of germs. So he introduced the plan of washing out wounds with a solution of carbolic acid to kill the germs; then he put on a sterile dressing to prevent germs entering the wound from the air, so that healing could go on uninterruptedly. This process of keeping wounds etc., free from germs is called Antisepsis. It has revolutionized the surgical world and has been the means of saving thousands of lives. Since its introduction, abdominal operations can be performed in safety and with success.

Antiseptic solutions of bichloride of mercury, carbolic acid, etc., are used to sterilize the hands of the surgeon, the instruments, or anything that may come in contact with the operation wound. Every precaution is taken to prevent germs entering the wounds. When bacteria enter the tissues of the body they produce and excrete poisonous substances which we call toxins, or poisons, which cause disease.

Common colds are caused by germs. At one time we feel quite well and in a few days or perhaps a few hours we are sick; we have been near some one who has a cold and we get the germs and so take the disease, or it may be that we had the germs in our system before, and as long as we are well and strong they do us no harm, but if we overwork or are exposed to cold or wet, the resisting power of the tissues of the body is lowered, and the germs may take hold and make us sick.

The colon bacillus is a germ which is always present in the human bowel in health and does no harm under ordinary conditions, but, if the bowel is injured or wounded in any way, or if we eat food which we cannot digest properly and it remains in the bowel and causes irritation, the colon bacilli come to this spot where the resistance is lowered and cause inflammation of the bowel, or appendicitis, if it is in the appendix.

Typhoid fever is caused by the presence in the blood of the germ called the typhoid bacillus. It is a very active organism and has attached to its body little flagella which are like whip lashes and strike the blood in such a way as to move the germ along. Every case of typhoid fever has its origin in a previous case—every person who has typhoid has in some way got the germs which came from the excretions of someone who before had the disease. The commonest mode of typhoid infection is through the drinking water. A very striking instance occurred at Plymouth, Pa., in 1885. The town, with a population of 8,000 was supplied with drinking water from a reservoir fed by a mountain stream. During the months of January, February, and March, in a cottage by the side of and at a

distance of from 60 to 80 feet from this stream, a man was ill with typhoid fever. The attendants were in the habit at night of throwing the evacuations on the ground towards the stream. During these months the ground was frozen and covered with snow, but in the latter part of March and early in April there was considerable rainfall and a thaw, in which a large part of the three months accumulation was washed into the brook. About April 10th, cases of typhoid fever broke out in the town, appearing for a time at the rate of fifty per day. In all about twelve thousand persons were attacked. Excretions from the bowels of typhoid patients should be allowed to stand in an antiseptic solution for half an hour before being disposed of. This will kill the typhoid bacilli. Either a one-in-twenty carbolic acid solution, or a one-in-two-thousand bichloride of mercury solution may be used for this purpose. Typhoid infection may come through the food supply, *e.g.*, milk. It may be from the water used in washing the milk cans. The germs may be conveyed in ice, salads, etc., may be in celery or other uncooked vegetables that have grown in soil on which infected material has been used as a fertilizer.

Flies are undoubtedly most active agents in the spread of typhoid fever. If they can gain access to excretions or other infected material, they may carry the germs from them to food or whatever they visit next.

Tuberculosis is the most universal scourge of the human race, it is more common in cities or wherever the population is massed together. At the present time there are forty thousand persons in Canada suffering from this disease, twelve thousand of these are in Ontario. Tuberculosis is caused by a germ called the tubercle bacillus, which is a short fine rod about 1-7000 inch in length. The common mode of infection is by inhalation. It has been estimated that a person with advanced tuberculosis will give off from one and a half billions to four billions of bacteria in twenty-four hours. The great majority of these are in the sputum, but some are given off in the breath during the act of coughing, particularly if the patient coughs with the mouth open. In the Muskoka Sanitarium for Consumptives the patients are taught to hold a piece of gauze over the mouth when they cough to prevent the spread of the germs. The gauze is afterwards burned, The chief danger of infection in tuberculosis is in the sputum; when expectorated on the streets, etc., and allowed to dry the sputum soon becomes dust, and is distributed far and wide. Tuberculosis patients should be taught to spit into a cup containing a 1-in-20 solution of carbolic acid, or he may use the sanitary sputum cup which has a lining of thick paper; after the cup has been used for a time the lining and the contained sputum are lifted out together and burned. Then the cup is boiled, or washed in an antiseptic solution to kill the germs that may adhere to it, a new paper lining is put in, and it is ready for use again. If these precautions were taken in connection with every case of tuberculosis the danger of infection would be much lessened.

Diphtheria is caused by the presence in the throat of a germ called the Klebs Loeffler bacillus. It is different from those already mentioned in that the germ does not enter the blood, but remains localized in the throat, and produces toxins which are taken by the blood to all parts of the body.

After any infectious disease, the sick room should be disinfected. The best material to use for this purpose is formalin, which on evaporation gives off formaldehyde gas which kills any germs that are adhering to walls, furnishings, bedding, etc. Use 10 or 12 ounces of formalin for every 1,000 cubic feet of air space in the room. Stop up all cracks in the room, close all chimneys, stove-pipe holes,

windows, etc., all openings of any kind must be closed. Make the room as nearly air-tight as possible, so that the gas cannot escape before killing the germs. Fasten up a line across the room to which a sheet can be attached. Open the bureau drawers and leave everything in situ. Mix the formalin with three times its bulk of water, throw it on the sheet with a dipper, then leave the room and close the door, keep the room closed for twenty-four hours. At the end of that time all disease germs will be killed. Then open the room and air it. It will not be fit for a sleeping room for three or four days.

INFANT MORTALITY.

By Dr. Helen MacMurchy, Toronto.

In the report of the Registrar-General for Ontario, printed in 1908, being the 37th Annual Report, we are informed (on page 5) that the number of births in Ontario for the year 1906 was 51,710. On page 33 of the same report we find that

From "The Survey, New York *F. D. Greene, Photographer.*

THE REAL SOCIAL CENTER OF THE MILK DEPOT AND COMMITTEE.
A back yard consultation at the union settlement.

the total number of deaths under five years is 10,085, and under one year of age, 8,403.

As there were over 50,000 births, and 8,403 children died under one year of age, we may say that out of 100 children born, we lose 16 before they are one year old. This is a heavy loss. This is our rate of infant mortality in Ontario, and we have no reason to pride ourselves on it from any point of view. Our general death-rate is 14.8 per thousand. That is, the death-rate under one year of age is more

than ten times as large as the death-rate at all ages. True, this death-rate includes still-births and congenital malformations, etc., but then so it should. It is generally agreed that no infant death-rate should omit or exclude these. In greater New York, in 1907, 17,437 infants died under one year of age, a rate of about 15 per cent.

In Boston, Washington, Baltimore, New Orleans, Philadelphia and Brooklyn, the rate varied from 19.4 to 27.4 per cent.

The importance of infant mortality may be better appreciated when we remember that it is the best index to the sanitary condition of a community. In the clean, careful, civilized, intelligent, industrious family, the baby lives. In the dirty, careless, uncivilized, ignorant, lazy family, the baby dies. There are exceptions, but this is the rule. Where municipal and personal hygiene is attended to, you find the infantile death-rate low. Where the milk is dirty, the water supply not above suspicion, the streets unswept, the flies numerous, the food uncovered and uncared for,

From McCleary's "Infantile Mortality.

THE "GOTA DE LECHE," MADRID.—(WEIGHING THE BABIES.)
Inaugurated January, 1904, by H M. the Queen of Spain.

the refuse not properly disposed of, fresh air scarce, and the people poor and ignorant, the infantile death-rate shows it as sure as fate. And one of the most disturbing facts is that, while the general death-rate is going down, the infantile death-rate, except in some places, where people have wakened up and are doing something about infant mortality, is not going down. And it is not going down in Ontario. We are not working at it much. And it takes plenty of hard work to get the infantile death-rate down. One may say that France began the modern campaign to save the baby. We may be guilty of a little inward smile at this. We may allow ourselves one little private reflection that France needs to. There are so few children born in France. But Ontario is a close second. Hardly anywhere outside of France is there such a low birth-rate as in Ontario. It has improved a little recently, but in 1905 there were 211 fewer births than in 1906, and the rate is only 23.3 per thousand of the population in Ontario, whereas in

Britain it is something like 28 per thousand, and in France something like 20 per thousand. The Women's Institutes, which are "for home and country," could do nothing more patriotic, nothing that means more for the home than to save even one baby's life. The members of the Women's Institutes have more influence in this direction than anyone else in Ontario.

Many plans have been tried and all of them have been good plans, to save some of the babies from the death that threatens them in the first year. There was a Mayor in Huddersfield, in England, whose name was Mr. Benjamin Broadbent, brother of the famous physician, Sir William Broadbent. He knew that in Huddersfield the infantile mortality was 16 per cent. (just about what it is in Ontario). Of 1,000 babies born in Huddersfield, or in Ontario, 160 died before the year was out. The new Mayor of Huddersfield took this matter to heart. He interested others, he encouraged sanitary inspection, he gave official sanction and

From "The Survey," New York. *F. D. Greene, Photographer.*

ADVICE TO THE MOTHER AS THE CHILD IS WEIGHED AND PRESCRIBED FOR.

help to many improvements, but he did more. He came into personal touch with the mothers by a plan of his own. During his year of office he watched the births of the babies, and to every mother when the baby's birth occurred, he sent a promissory note, in due legal form, printed in gold letters and signed by himself, promising to pay to her one pound on the first anniversary of the baby's birth, if the baby were alive and well at that date. Then the lady health inspectors, who are a great success in England, called on the mother, advised her and helped her, told her what to do and what not to do. And the united efforts of the Mayor and people of Huddersfield were crowned with success. At the end of his year of office the golden sovereign was presented to a good many mothers, and in the second year the infantile mortality of Huddersfield was cut down about 50 per cent. It had been about 160 per thousand. It was now something over 80 per thousand. Truly a

wonderful result. It was not the sovereign; it was the knowledge, more precious than gold. It was the interest, it was the personal effort, it was the feeling that the babies could be saved and must be saved.

The Mayor of Huddersfield and the Chairman of the Health Commission of Glasgow were in Paris, in October, 1905, at a Congress of Infants' Milk Depots. Returning to England, deeply impressed with the energy and intelligence that France was putting into the question, contrasted with the apathy and non-intelligence in Great Britain about her children, they took steps to summon a National Conference on Infantile Mortality. It met in London, in 1906, and lasted two days, June 13 and 14. The Right Hon. John Burns was President, and his opening address was perhaps the most effective and eloquent ever made on the subject. Mr. Burns pointed out that the Railway Engineers' Society, numbering 100,000 men, found that in the last 50 years, as a result of greatly improved conditions of living, such as better wages, food, houses, increasing intelligence and sobriety, the average length of life among them has increased 12 years and the death-rate has correspondingly decreased. But the engineer's baby has reaped no benefit from these improved social conditions. The infantile mortality remains the same—"wealth has increased, but the infant has not shared in it; physical comforts have enlarged, yet the weakest, the smallest and the dearest to us all alone bears unduly the penalty and the burden of death."

This being so, what is the remedy, and what is the cause? One remedy stands above all others. I quote John Burns again:

"First, concentrate on the mother. Let us glorify, dignify and purify motherhood by every means in our power." The most critical period for the baby is probably the first 24 hours. Why? Because in that first day the question as to whether or not the baby shall be nursed by the mother is usually settled. If the baby is taught to nurse (most of them know already), then its chance of life is at once made almost secure.

The medical officer of health of Birmingham investigated the deaths of 3,000 babies, and out of all that great number he found only 24 who were nursed at the mother's breast. Dr. Joseph L. Winters, of New York, says, "No medicine, no care or treatment, no proprietary food will guarantee the life of a sick infant in the summer time. There is one remedy and one alone. That is, that the infant should be fed as God intended it to be."

Clean milk is a great help and is indeed indispensable when the infant comes near the end of the first year. Many infants have been killed by poisoned milk, for dirt in milk contains poison, and is poison. But the business of motherhood demands intelligence, thought, interest, time, and above all, that affection which is the truest wisdom and the best guide. Not the ignorant affection—that is fatal—but the enlightened love that seldom or never errs.

Childless or not, mothers or not, we must all take our share in this national problem. Few men have so won the hearts of Canadians in a brief visit as did the Right Rev. W. Ingram, Bishop of London. In July, of this year, he found time to go to the St. Clement's Maternity Home, at Fulham, in that part of London he knows so well, in order to encourage the efforts made there to lessen infantile mortality, which is there very great. Prizes were offered to all the mothers whose infants showed care and attention, and these were distributed by one of the Princesses of Teck, assisted by the Bishop of London. Seventy-eight prizes were given, most of which were articles of clothing, but two of them were the well-known collapsible carriages. The Bishop took one of the carriages, placed a prize winner

in it, and wheeled the baby along the terrace, followed by the Vicar, who did likewise. The Bishop, in his speech, said that he could not imagine a more delightful scene than the one they were witnessing that afternoon. It meant a great deal both to the nation and to the church. He had been for years trying to back up the efforts both of Miss Heatley and her excellent staff at the Maternity Home, and of others, in seeing that the children of the nation were properly fed and looked after in their early years. No one who saw those fat, rosy, smiling, jolly babies could fail to acknowledge that a great improvement had been effected. He loved to see their dear old church in the thick of everything that was for the good of the people. They had to learn from their Master to care for the bodies as well as for the souls of the people, and he could not imagine a more beneficent work for the church to put her hand to than to help people to bring up their children, not only fat and rosy, but good Christians also.

In Paris, the most successful means adopted have been the cafés established by Mme. Coullet, where any poor mother with her baby is given a good dinner. Indeed, all over the world, as our illustrations show, patriotic men and women are joining in efforts to help the mother, to teach her what is at once the newest and the oldest opinion as to the feeding of infants, that the mother alone can do it satisfactorily and safely, and that she should nurse it, and placing at the mother's disposal medical skill and knowledge, weighing her baby regularly, advising as to its health, clothing, feeding, etc., giving her the assistance of the trained nurse and the sanitary expert, and all this because she is doing a duty of as much national importance as the "soldier and sailor, too." Nor is motherhood merely physical or material. It is an intellectual and, above all, a spiritual function.

"They are such little feet;
They have gone such a tiny way to meet
The years which are required to break
Their steps to evenness, and make
Them go
More sure and slow.

"They are such little hands;
Be kind. Things are so new and life but stands
A step beyond the doorway. All around
New days have found
Such tempting things to shine upon, and so
The hands are tempted hard, you know.

"They are such new young lives;
Surely their newness shrives
Them well of many sins; they see so much
That, being mortal, they would touch;
If they would reach
We must not chide, but teach.

"They are such fond, dear eyes
That widen to surprise
At every turn; they are so often held
To suns or showers—showers soon dispelled
By looking in our face—
Love asks for such, much grace.

"They are such fair, frail gifts;
Uncertain as the rifts
Of light that lie along the sky—
They may not be here by and by—
Give them not love, but more—above
And harder—patience with the love."

LABOR SAVING IN THE HOME.

By Miss Mary Yates, Guelph.

Deeper than any dogma, stronger than love of beauty, is the Puritan instinct for health and neatness, but, unfortunately, there are many neat and healthy homes without the least pretensioin to reposeful comfort for their inmates. This certainly can only exist in perfection in well-ordered homes where the labor or routine work is faithfully and unostentatiously performed. Bare floors, no upholstery, and food that has been prepared in factories, while reducing labor, reduces also the home to a mere house. Labor can be saved almost indefinitely if there is no desire for gracious ease and the dear delights of cosy hearths. It depends largely upon one's

Fig. 1

conception of home life whether or not certain labor is considered superfluous. Individuals do not agree in decisions as to labor that is absolutely worth while, and that labor which is out of all proportion to the result achieved.

What is the object of all the labor in and for the home? Surely it must be the comfort, happiness and well-being of the majority of those beneath the roof. All labor that results in nervous strain and that disturbs the harmony of the household should be intelligently lightened. Intelligently, yes, for surely the greatest labor-saving device is the human brain. Set it to work to evolve a system by which the daily routine of the house shall be reduced to fixed limits. Write this out, if necessary, study it, go over it and over it, intelligently considering how the method may be improved, steps saved and the work reduced. Distinguish between daily routine essential to health and comfort, and the extra work to be undertaken as time and opportunity permit. Never lose sight of the object for which the work is being

done and to which it is or should be subordinate. Every person in the house should understand this routine, so that anyone can take it up at any part of the day and go through it alone in a business-like way. Why should the family tumble over each other to get an ordinary meal? *One intelligent worker* is all that is necessary in nine cases out of ten.

Decision as to what shall be included in the daily routine is where intelligence

Fig. 2

is shown, and in this respect striking differences are noticeable amongst women of the same education. For instance, in some homes the slops are thrown out of the bedroom window by anyone who chances to notice that the job wants doing. In others, the same work is a matter of daily routine at a fixed time, the worker accompanied by a pail, clean cloths and boiling water.

It has been said that human hands are the cheapest machines to work with, and the easiest to keep in order. But the hands must be under the control of an understanding brain to have their full value as a device for accomplishing work. Foremost among labor-saving devices should be placed an extra pair of hands; intelligently used by the mistress, these will prove of great value in routine work, for which purpose only they should be used for some time, if true comfort is to result from their employment. The unintelligent use of these extra pair of hands has resulted in a chaotic state of affairs in domestic service. It is a vexed question, but undoubtedly much routine work can be done by any outsider under proper management, and the time saved can then be devoted by the mother to that work which no one can be paid

Fig. 3

to do for her, thus differentiating between the mere routine work of housekeeping and the higher and nobler duties of the wife and mother which affect the character and development of those about her.

Next in importance to the right use of brains and hands as labor savers come the mechanical means to reduce work, viz., the plan of the house, the choice of materials and the selection of appliances or utensils, which all play their part in the arrangement of the work.

The Plan of the House.

The relative positions of the dining-room, pantry, kitchen and cellar or food storage, with the presence or absence of steps between them, mean a great deal in any

house. The saving of labor, implied by their nearness, so often implies loss of comfort by reason of the smell of cooking, the noise of clattering utensils and the tinkle of dish-washing, in those homes where the dining-room is used as a general sitting-room. This custom in itself is a saving of labor which amply repays the slight trouble of removing the cloth, etc., after meals. This is scarcely the place in which to take up the whole question of construction. Much has been said and written on the subject of domestic offices, but is enough thought about them in the ordinary home? Take the position of the linen room or cupboard—does it save more labor upstairs or down? Is it easier to manage with a small kitchen or a large one? The old-fashioned still-room had many advantages, and a room opening off a small kitchen and connecting it with the pantry is certainly a very great comfort, besides avoiding

Fig. 4

the labor of moving the range in summer, and preventing much of the noise, heat and smell entering the dining-room. The refrigerator, the housekeeper's desk, and a substantial table placed here enable a great deal of work to be done, away from the heat of the stove, and yet do not mean too many steps back to the cooking food. Even in winter, surely numbers of women spend an unhealthy amount of time in too high a temperature. A morning room for the ladies of the house can easily be made of this one if it has a pleasant aspect; all kinds of developments may be added if the mistress of the house does her own work and yet is not without other interests. For instance, her house plants may be wintered over here; in one case a small hot-house has been built off; and all that pleasurable work may be attended to in the intervals of cooking, and the plants cared for during their unsightly periods. The presence of her desk enables correspondence to be attended to and the introduction

of the sewing-machine, a shelf of favorite books and an easy chair, will provide for other interests. In fact this "still-room," without a still, may be converted into a means of relaxing strained nerves and of gaining a certain amount of intellectual recreation, which seems to be prohibited in the oftentimes distant parlour during hours of necessity spent in the neighbourhood of the stove.

The Choice of Materials.

Of the brushing of carpets, rugs and curtains there is verily no end. Yet how the noiseless footfall, the easy chair, the down cushion, the screened window are appreciated! A veritable dust-trap is upholstery, and it is sound advice to clear away all of it that is not vital to comfort. Drapery that is mere ornament is a farce where labour is scarce, but care must be taken to avoid aching backs, prison-like effects, and the glare of unscreened light.

The cleaning of walls, ceilings, floors and furniture is indeed labor, and labor that cannot be saved, but only lessened by the intelligent choice of material. The dining-table of bare wood scrubbed white, or of oak polished by generations of elbow-grease, to reflect the shining crystal and silver, or again, covered with snowy damask, hand embroidered and open hemmed, represents an amount of labor, lessen it as we may. Its beauty is our compensation and our pride.

Fig. 5

Selection of Appliances.

Perhaps the illustrations will be more suggestive in themselves than lists of utensils found to be an advantage by many. These things are discussed at our regular meetings, and we agree to differ upon the merits and demerits of bread mixers, fireless cookers, kitchen cabinets, vaccuum cleaners, and fixed laundry appliances.

Illustration No. 1 shows a fireless cooker open below the grocery cupboard, two kinds of bread crumbers, and a kitchen cabinet with a couple of casseroles on top, of which more anon.

Illustration No. 2 gives a view of the interior of a storage pantry for a small establishment, where the floor covering is of an attractive nature. Note the provision of paper at the back of the door, for shopping lists, orders, etc.

Illustration No. 3 is an example of what may be done to facilitate the routine of washing up. The double-tired wagon on wheels has been pushed from the dining-room without the strain of carrying heavy trays, or the fatigue of many journeys. The double handling of the utensils is avoided by the provision of a hinged shelf on one side of the washing-up sink or table, which enables the wagon to be pushed into line with the dishpan and rinsing water.

Illustration No. 4 is an example of utilizing a corner in which to make a cupboard for the cleaning outfit. Note the hanging can of polish, the mop-wringer

Fig. 6

attached to the pail (which also has a soap-dish that many find useful). The long-handled dustpan and the carpet-sweeper are perhaps old friends.

Illustration No. 5 shows a less expensive method of turning a corner into account for exactly the same purposes. Behold a set of nest boxes turned on end, and their divisions used as shelves for all the cleaning outfits required for various purposes—stoves, baths, furniture, etc., etc. The lamp-cleaning table is next to it, where all the work with coal oil is attended to. Note the end of a home-made wooden trough beneath pump spout, which takes the waste water outside the shed.

Illustration No. 6 is a fruit sterilizer which enables twenty-four quart sealers to be done at once. Note the thermometer which is affixed and stands upright in such a position that the temperature can at all times be read. N.B.—This room is one of those referred to already, and is situated between the kitchen and the pantry.

On the wall can be seen the slate used daily in this house, for the bill of fare and the shopping lists.

Illustration No. 7. The fireproof china baking dish or casserole, before mentioned, is here shown being taken from the oven. It is a pity more are not used, for consider the reduction in washing up by making one set of dishes do the work of two. That dinner, represented at dishing-up time, consisted of baked fowl, stewed tomatoes (in the two covered dishes upon the top of the stove) and scalloped potatoes, and the whole thing is going straight to the dining-room in the dishes in which the cooking has been done. It will be found that the flavor of many things is vastly improved by this method of cooking, which will be well known to those who have enjoyed the delights of French country fare, where those born housewives depend upon the excellence of the food itself, with the addition of pepper and salt, to give its own appetizing flavors, rather than upon a multiplicity of seasonings.

Fig. 7

Try a few onions baked in butter in a casserole—or a bit of fish with a squeeze of lemon juice, butter, pepper and salt, and you will enjoy it. Note in this picture the extra pair of hands recommended earlier, as the labor saver *par excellence.* Who declared that boys cannot be made useful in a house? Behold, ye mothers, a boy trained by an old maid. That dining-table has been set entirely by him—its glass, silver and china are his care, and now he takes in the dinner which was prepared earlier by one who had no further time to give to house work that morning.

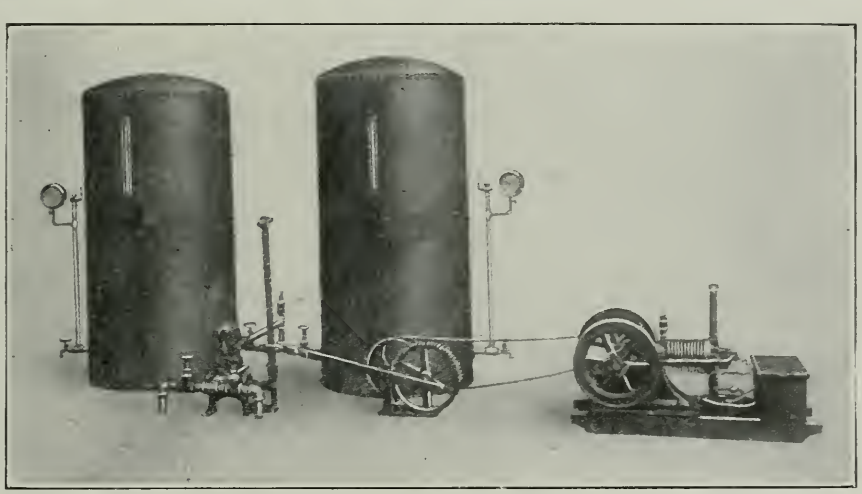
Perhaps the use of the sideboard in the dining-room saves as much labor in shape of needless steps as anything in the house. Why load it up with a quantity of ornaments, fancy work and bead mats, and then walk in and out of the room numbers of times to carry things that could be set there?

WATER SYSTEMS IN COUNTRY HOMES.

By Geo. B. Snyder, M.D., Ridgeway, Ont.

By country homes, I mean homes in country villages and towns that have not a municipal water supply and sewage system. In the cities people are forced, by sanitary laws, to install in their homes a water system with water closet, bath tub, and kitchen sink. In the country this is not so necessary; we have other advantages and blessings to make up for the conveniences so necessary in the city. Nevertheless, every home in the country may have these advantages and at very little extra cost.

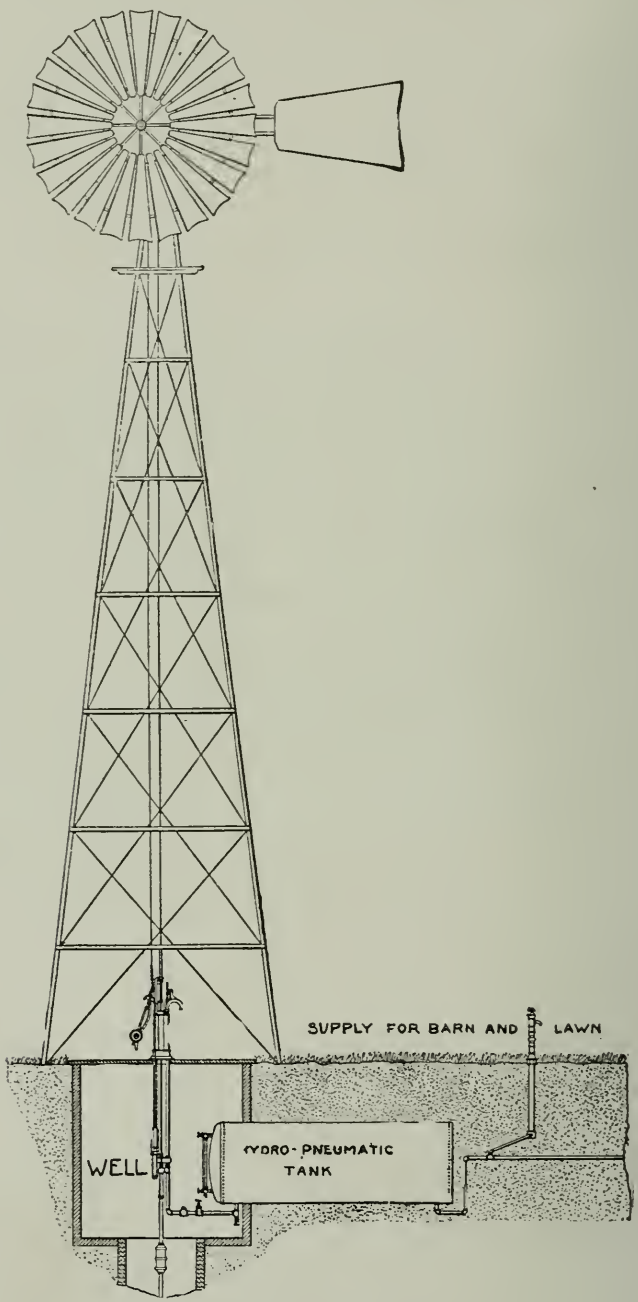
The first essential in a complete and successful water system is to secure sufficient water pressure to force the water through the pipes to the places required. Water pressure is secured in the city by having reservoirs or stand-pipes built as



One tank for soft water and one for hard water.

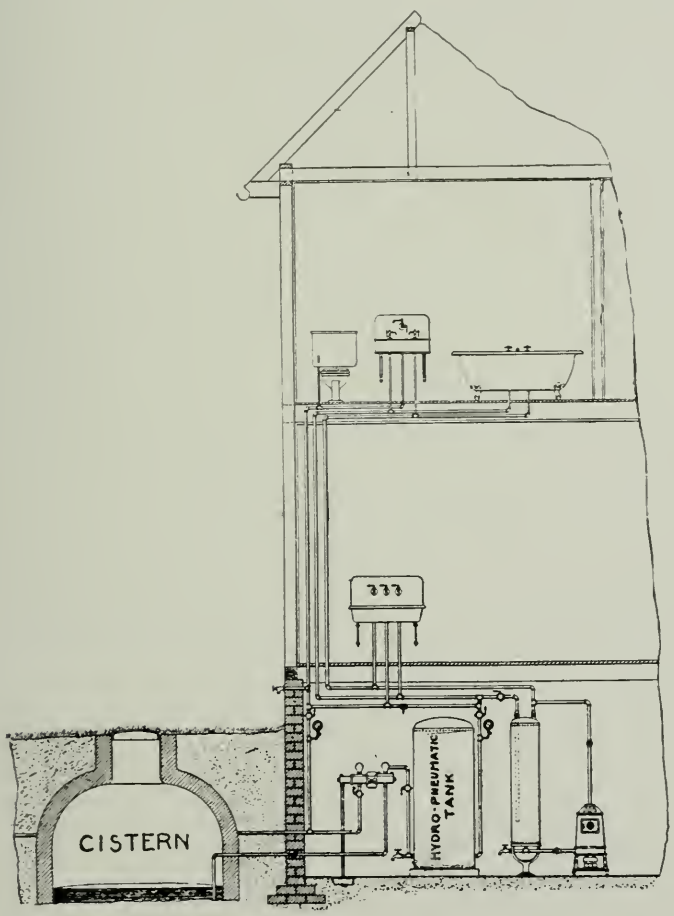
high as possible above the city. In our country communities there are two ways of securing water pressure:—First, by building an elevated tank; second, by the use of the hydro-pneumatic tank system, where the water is pumped into an air tight tank with a windmill or gasoline engine; the air becomes compressed, giving a water pressure sufficient to force it wherever required. In the latter case, the tank may be placed in the cellar. It will be a simple matter to put a system of pipes through the house and install all the modern conveniences. A heater and boiler will complete the outfit. The latter will be found very convenient for the bath room, as well as supplying a liberal quantity of water for washing, etc. With a water system, the cesspool will become a necessity, in order to dispose of the sewage and the waste water. A hose will be found useful also for watering the lawns and as a protection against fire.

Since I have enumerated the parts of the water system, you can easily see what uses it will fill, and be able to count its advantages over a home without it. It is a *great savor of labor.* In the kitchen there is no water to carry and no water to pump, because the water is drawn from a tap and carried away by the sink. In the bedroom the toilet set is not required; there are no slops to empty;


SUPPLY FOR BARN AND LAWN
WELL
HYDRO-PNEUMATIC TANK

Domestic Waterworks with Power Force Pump.

This cut shows a system of modern plumbing arranged for hard and soft water. The hard water is supplied from either a deep or shallow well, and is used for laundry, kitchen and sanitary purposes in the house, and for watering stock, sprinkling, etc., out of doors. It is also used for operating a water lift which supplies soft water from a cistern for kitchen, laundry and bathing purposes by means of a smaller pneumatic tank located in the basement. While this system may look somewhat complicated, it is in reality very simple. Being positively automatic it requires no attention other than the oiling of the windmill. The pump is provided with a hydraulic cylinder which controls the operation of the mill by the rise and fall of the pressure in the hard water tank. The water lift is so constructed that when the pressure in the soft water tank equals the pressure in the hard water tank, the lift will stop working and will not start again until water has been drawn off and the pressure reduced. This will be found a very complete and satisfactory outfit for country or suburban homes, or for farmers who have a stock or dairy farm and wish to enjoy all the advantages of modern plumbing in their homes. Where a windmill is not desirable, the system can be operated by a hot air pumping engine or gasoline engine, and where electricity is available by an electric motor.



at the barn and in the yard it saves time and labor. A tap is turned and the water trough is filled for the stock. *The convenience* of a water system is one of its best features. It is always handy and is always ready. When you come in at night you are hurried and tired; you would like a bath and realize that it would be refreshing and make you sleep better, it would take the burning out of your legs and feet and the nervousness out of your body, but the trouble of getting a pail of hot water and a warm room is too much bother; whereas if you have a bath tub and hot water and a warm bathroom, you get undressed for bed, jump into the bath tub, take a good bath and go to bed, and enjoy the sleep of the blessed, without waste of time and trouble. Only those who have toilet rooms in their home can fully appreciate the advantage of the closet. No one needs to go out of doors in the rain or snow, at day or at night, and especially the latter. This advantage is especially convenient for old people who are not able to get about very well. In the case of small children, who have to be taken to the closet, a great deal of labor is saved and the children are taught regularity and cleanliness; bad odors from standing vessels used by the children through the night are also dispensed with. I maintain that the toilet room should always be on the same flat with the bedrooms, so that it is convenient at night and that a bath may be taken in the morning or evening without the extra undressing or redressing, a bath robe being sufficient to go from the bedroom to the bathroom. Another advantage of the toilet room is the improvement in the sanitary conditions. The constant stench of an outdoor water closet located near your back door is done away with and the sewage is carried into the cesspool and does not pollute the air with bad odors. In the cesspool the sewage is liquefied and purified by bacteria and absorbed by the soil and not carried away by freshets into the water-courses and natural streams. The closet inside the house is also advantageous to health in that it relieves any danger of catching colds by going out in cold and wet and stormy weather. It is also a noticeable fact that people are inclined to keep the bowels more carefully regulated when there is a convenient clean and warm closet, and permit me to say that a large percentage of our ailments are directly due to constipation. In my mind constipation is only a habit, a lazy habit, due to neglecting the bowels when nature demands attention.

Then the advantages of fire protection and lower insurance rates are not to be overlooked, neither is the advantage of having water for the barn, lawn and garden.

Are the advantages of a water system worth its cost? I have just enumerated some of its advantages. In my opinion the water closet alone is worth more than its cost to a family, but let us compare its cost with that of other rooms in the house, kitchen, bedroom, library, drawing room, etc. No one of these rooms are used more constantly than the toilet room, and the furnishing of any one of them will cost about as much as a toilet room. In these days everything is for convenience and to save labor. This principle is applied for the men in the use of the binder, hay loader and hayfork, etc. Then why should it not be applied to the things about the home?

You might ask me, "Why do not more country homes have a water system and toilet room?" Well, I think there are two or three reasons. First, they can get along without it. Second, the people do not properly understand the system; they have heard of some one who had a bathtub and it did not work or the pipes froze up and burst, the water leaked over the house, etc. They might put it in and it would not work and then money would be wasted. They have listened to other people's complaints of a poor and defective system, and have not themselves

made a study of a good and successful system. In the third place, the extra cost has prevented many from putting in a water system. But let me say here that I firmly believe that in the next ten years it will be more unusual to hear of a good home being erected without a water system and toilet room, than it is now to hear of a good home being erected with one.

What is the cost of installing a water system? Probably this is the most interesting point in my paper. The cost depends principally upon the quality and amount of fixtures you use, therefore, you can adopt a system that suits your own pocket. From $175.00 to $500.00 is about the amount required, depending upon how simple or elaborate you wish to have it. Two years ago we had a water system installed in our home at a cost of $210.00 and we would not do without it for $500,00. It works completely, never blocks, supplies hot and cold water, flushes the closet well and disposes of the sewage most satisfactorily. Our outfit consists of the following:—

1.	Rainwater tank in the garret, size 12 feet long, 5 feet wide and 2 feet high. This tank is lead lined and expensive	$70 00
2.	60 feet of eavetroughs half-way up the roof to supply rainwater. This supplies us about half the year	6 00
3.	Supply of well water from our neighbor's tank for the balance of the year	6 00
4.	Wash basin, 18-inch, with back and board	15 00
5.	Cast iron bath-tub, white enamel. A1 quality, 6 feet long	35 00
6.	Closet (low down)	20 00
7.	Boiler	9 00
8.	Heater	6 00
9.	Hand force pump to force water up from cistern	9 00
10.	Nickel fittings and tops, etc.	10 00
11.	Piping inside and out	6 00
12.	Labor—Plumbing, etc.	10 00
13.	Cesspool, small, cement, one compartment	8 00
	Total	$210 00

The tank might have been lined with galvanized iron but would rust out and not be so safe—at cost of $25.00 less.

I might have got a steel tub for $18.00 and it would have been better, not so heavy and would not take so long to warm up when the water is turned in—would have cost me $15.00 less.

Now the system I have described is very simple, is very reasonable in price, contains the best in every article, and is complete and satisfactory in working. But I have a very heavy lead lined tank in the top of my home. This is a disadvantage. When full of water it is very heavy; some day it may settle the partitions of the house, and put the walls and doors out of plumb. If any accident happened it so that it would leak, we would have our house flooded and wall paper, plaster and furniture ruined. Also I have to buy water from my neighbor's tank for part of the year.

Two of my neighbors have just completed very elaborate systems in their homes, but being more elaborate, they naturally cost more money. They have drilled good new wells for hard water and put in a large cement system to supply soft water. These are both required in any home, so we do not need to count these in the extra cost of a water system. Now such a system as these gentleman have installed, could be installed in any ordinary private home sufficient for its requirements—approximately the following cost:—

1.	1 one-horse power gasoline engine to pump the water from either the well or cistern into the hydro-pneumatic tank	$65 00
2.	Hydro-pneumatic tank as per cut, size 3 feet in diameter, by 10 feet long	105 00
3.	Kitchen sink	15 00
4.	Wash basin for toilet room	13 00
5.	Steel bath tub, white enamel, A1, 5½ feet long	18 00
6.	Boiler	9 00
7.	Heater	10 00
8.	Force pump for well and cistern	20 00
9.	Low down closet	20 00
10.	Nickel fittings, taps, etc.	10 00
11.	Piping—lead, etc.	10 00
12.	Labour—plumbing, etc.	25 00
13.	Cesspool, large, with 3 compartments made of cement	20 00
	Total	$340 00

This tank is placed in the cellar where it is handy to get at and is free from frost, and where it does not put any weight on the structure of the house. Capacity of this tank is 525 gallons. These are strong metal tanks, air-tight, tested to a pressure of 125 pounds to the square inch. Water is pumped in them under force and as they fill up, the air which is confined in the top of the tank has no escape and becomes compressed, forming a pressure on the water. When the tank is three-fourths full the air is compressed to four atmospheres and the pressure is then forty-five pounds to the square inch on the water, and is sufficient to raise the water ninety feet high. This pressure is sufficient for all purposes of kitchen, bath room, lawn, barn, and fire protection.

This system is most complete; you always have water. If your soft water gives out you turn a tap and pump in the hard water with the same engine, same pump and same set of pipes, and the supply has pressure enough and is great enough to accommodate kitchen, toilet room, lawn, and barn, and to use also for fire protection.

HINTS FOR THE HOME NURSE.

By Miss B. Millar, Guelph.

Health has been comprehensively defined as the "perfect circulation of pure blood in a sound organism." Any departure from any one of these three conditions constitutes disease.

The necessary conditions for health are: 1. A proper supply of food. 2. The proper cooking of same. 3. Air and sunlight supply. 4. Good environment. 5. Exercise. 6. Rest. 7. Sleep. 8. Bathing.

Let the one acting as nurse in the home study the above conditions, not only for the sake of the patient, but also for herself. A nurse cannot do without proper rest, food and exercise without injuring her health.

No two patients are alike, but there is one necessity common in all cases and that is *cleanliness.* Keep the patient with clean skin, with clean clothes, clean air and clean general surroundings.

A nurse should always be neat, clean and attractive, as her appearance has an influence on the patient. Her manner also is of great importance. A bright, cheery person works wonders in a sick room. The nurse's aim should be to keep the room atmosphere tranquil, peaceful and cheery, even if it means the exclusion of many visitors. Loud talking and whispering should be avoided. Get the patient's attention before speaking and use a clear, distinct, low voice.

Be careful to keep the room and its furnishings neat and orderly. A patient accustomed to system and exactness may become fidgety if a picture on the wall is not hanging perfectly straight. Keep unnecessary noises from the invalid's room. Have rattling windows, creaking doors, etc., etc., repaired as speedily as possible. Do not have rocking chairs in the room. Avoid clothes that rustle and shoes that squeak. Many more of these little things might be mentioned but it is not necessary. The thoughtful nurse will find many ways of adding to the patient's comfort, remembering that it is necessary to secure repose of mind as well as of body. Let me quote what one nurse says: "Good nursing depends largely upon attention to details so apparently trivial that a careless person would never think of them, but which make or mar the comfort of the invalid."

As a certain amount of depression is the inevitable accompaniment of sickness, all counteracting influence should be brought to bear. An influence that has a more wonderful effect than most of us realize is *flowers*. Much might be said about them, but I will just copy a few lines from "The Canadian Nurse"—"With all their beauty and brightness, they bring a message of cheer; give them a warm welcome; make room for them; treat them kindly always, never make them a source of regret at any time; daily care well for them, leaving nothing that speaks of decay, changing the water regularly, so that there may be no heavy odor, and in order, likewise, to prolong their little life. Do not leave them in the room during the night, and when you have refreshed them in the morning, as you return them to the room they will be a new source of joy."

If you are leaving the patient to get your rest, be sure to write out explicit directions for the one who is to take your place and thus avoid mistakes.

In administering medicines, give at the hour stated—not fifteen minutes before or half an hour after; shake the bottle thoroughly; pour to the side of the bottle that has *not* the label on, so as to keep the label clean; measure accurately, a graduated glass is to be preferred to a spoon, as spoons are of variable capacity.

Do not leave the cork out of the bottle; keep the medicines out of the patient's sight—it does not add to the comfort of the one who is ill to lie in bed and gaze at the various remedies that are being tried.

The giving of the medicines is only one of the many duties of the home nurse, and, as a reminder of what we said at the beginning, I will quote another well-known nurse who said that, "Suitable hygienic conditions will often do more to cure patients than the administration of drugs."

Do not forget the windows. They are there for a two-fold purpose, to admit both sunlight and fresh air. Remember that ventilation is just as necessary at night as in the day time. Water has many uses in the body; so give the patient water to drink (if it is allowed by the physician), even if it is not asked for.

As a great deal of illness is brought about by errors in diet, it would be a good plan for our Women's Institutes to make a study of diet in sickness and health this coming winter. A food chart and a few reliable books on the subject would be a great assistance in carrying on the work. Never neglect to consult the doctor regarding the patient's menu. Each case varies and great differences of treatment are necessary. In considering the patient's tray, we want good food, well cooked and attractively served. Give food to invalids in small quantities at short and regular intervals. Do not leave food of any kind in the sick-room after the patient has finished with it.

At a great many Institute meetings talks and demonstrations have been given on roller bandaging, but I would like to speak of the triangular bandage. It can be used for many purposes and it can be much more readily improvised than any

other kind. To make these bandages, take a square of cotton and cut it from corner to corner diagonally.

The bandage may be used as a broad bandage by bringing the point down to the lower border and then folding into two, or it may be made into a narrow bandage by drawing the point down to the lower border and then folding into three. The bandage should always be fastened either by a pin or by being tied with a reef knot. It is applied to the body as follows:

To the Scalp.—Fold a hem about one and one-half inches deep along the lower border, place the bandage on the head so that the hem lies on the forehead and the point hangs down at the back, then carry the two ends around the head above the ears, cross them at the back, and bring them forward and tie on the forehead: then draw the point downwards, and turn it up and pin it on the top of the head. In applying this bandage care must be taken to bring it down close to the eyebrows, to carry the ends above, not over, the ears, and to tie them close down to the eyebrows, not high up on the forehead.

For the Shoulder.—Place the centre of the bandage on the injured shoulder with the point running up the side of the neck; carry the ends around the middle of the arm and tie them; take a second bandage, fold it into a broad bandage, place one end over the point of the first bandage, sling the arm by carrying the other end of the bandage over the sound shoulder and tying at the side of the neck; bring the point of the first bandage under that part of the sling resting on the injured shoulder, draw it tight, turn it down, and pin it.

For the Hip.—Tie a narrow bandage round the body at the waistline, tying the knot on the same side as the injury; take another bandage, turn up a hem according to the size of the patient, place its centre on the wound, carry the ends around the thigh, and tie them: then carry the point up under the waistband, turn it down over the knot, and pin it.

For the Hand.—Spread out a bandage, place the wrist on the border with the fingers towards the point; then bring the point over the wrist, press the two ends over the wrist, cross, and tie them.

For the Foot.—Spread out a bandage, place the foot in the centre with the toes towards the point; draw up the point over the instep, bring the two ends forward, cross and tie them round the ankle.

Large Arm Sling.—Spread out a bandage, put one end over the sound shoulder, let the other hang down in front of the chest, carry the point behind the elbow of the injured arm, and bend the arm forward over the middle of the bandage; then carry the second end over the shoulder of the injured side, and tie to the other end; bring the point forward, and pin to the front of the bandage.

Small Arm Sling.— Fold the bandage into the broad bandage; then place one end over the shoulder on the sound side; cross the arm over the middle of the bandage hanging down the chest; then bring the other end over the injured shoulder and tie at the side of the neck.

For the Chest.—Place the middle of the bandage on the injured side, with the point over the shoulder; carry the two ends around the waist and tie them; then draw the point over the shoulder and tie to one of the ends.

For the Back.—Begin by placing the bandage on the back and apply in the same way as for the chest.

HEALTH AND BEAUTY.

By Mrs. M. L. Woelard, Forest.

Do not think that the secret of a woman's beauty lies in the use of cosmetics. It is found in resplendent health, and a happy contented mind. It is frequently said that "a woman is as old as she looks, and a man as old as he feels." This suggests that age is a matter of feeling, not of years, and determined by the forces within one's self. Every woman should have the ambition to be attractive to others. It is a duty she owes to herself and her friends. No woman can avoid exerting an influence. Therefore let your influence be uplifting and inspiring. How much more may be accomplished in this direction if you are a bright, cheerful, neat and attractive woman. The end and aim of the Greek education was to educate so as to have a beautiful soul in a beautiful body. Consequently these people made use of suitable exercises to develop the body, and make it graceful and beautiful, and studied such subjects as would tend to refine and beautify the mind. And when we consider that God made Man in His own image, and that the body is only the temporary abiding-place of the soul, should we not then, as these ancient people did, do everything in our power to make and keep beautiful and clean, this temple, which holds that precious immortal part of us, the soul?

Women are too careless as to their personal appearance; in fact, we neglect ourselves. A woman is accountable to herself for every wrinkle, for her middle-aged figure, and for all the physical defects which she has so meekly accepted. Some will say "Handsome is as handsome does," but rest assured that goodness is more forcible when it walks hand in hand with beauty. Some one has said "Man is a selfish animal, but he has his uses. He shows women by his own example how to take care of her health and her good looks."

When a woman is exhausted, she will write letters or make out her accounts. She would laugh at you, if you were to hint that reading or writing would fail to rest her; all over the country women's hospitals flourish, because women do not know how to rest.

Another mistake is the constant worrying. Worry and hurry are our enemies, and yet we hug them to our bosoms. Women cross bridges before they come to them, and even build bridges to cross; they imagine misfortune and run out to meet it. We are not jolly enough; we make too serious a business of life, and laugh at its little humors too seldom. Men can stop in the midst of their perplexities and have a good laugh. It keeps them young. Women can't, and that is one reason why we fade so early. Worry not only wrinkles the face, but it wrinkles and withers the mind. So have a hearty laugh once in a while; it is a good antiseptic, will purify the mental atmosphere, drive away evil thoughts, bad temper and other ills. We should not hold the years we have lived responsible for the lines in our faces, but the lives we have led. Malice and snarling work havoc with the fairest faces. "Sunlight enters a growing plant, and reappears in a flower." Good thoughts and gentle acts, becoming a part of one's life, display their loveliness in a sweet expression, kindly eyes, and a soft voice. Selfishness, jealousy, envy and cruelty have faces of their own, which they give to those who entertain these unpleasant qualities. Beauty and dignity are built from within, and the qualities thus produced are warranted to wear. Even homely features are transfigured by a noble soul, while the beauty from which soul is absent is but a joyless mask, for, whatever may be said to the contrary, we are spiritual beings. The garb of flesh which the spirit for a time wears, is modified and affected for the better or the

worse. The face becomes more and more, the longer we live, the reflex and the indication of the inner self.

The preservation of one's beauty requires care and common sense; but not more care than you would give to your precious jewels or costly bric-a-brac. It is symbolic of a pure domestic life and womanly character to be a good housekeeper, to be exquisitely nice about the appointments of one's house. Why is it not more praiseworthy for the mistress of that home to consider herself the daintiest of her possessions, and to care for herself accordingly?

Men look to a woman for high ideals, and draw from her their inspirations. They appreciate in a wife all the self-sacrifice she has given, all the love and all the housewifely virtues; and yet the best of them will turn with regret from her fading beauty, too often caused by sheer neglect and carelessness as to her appearance. It would be most unkind for a man to say to his wife, "You are growing careless and slipshod in your appearance; you are not so attractive as you were when I married you," and yet there are many men who could truthfully say all this, for too often women reason from this standpoint: "My husband selected me before all other women to be his wife and the mother of his children. He made the selection of his own free will, because he loved me. Therefore it goes without saying that he preferred me to all others, and always will. Hence it is not necessary for me to be bright and attractive, for now he is mine." This is a great mistake, and the rock upon which many a matrimonial bark has been wrecked. The wise woman will make a desperate effort to always be as attractive, both as a wife and mother, as she was when a sweetheart. Be neat and dainty; nothing so quickly calls attention to fading beauty as a soiled collar, an uncombed head, and a general unkempt appearance.

Some may say that so long as the heart is young, it makes no difference about the face—but it does make a vast difference.

Scrupulous cleanliness, air, light, diet, exercise—these are requisites for health and beauty. Let a woman become enamoured of her bath tub and a good face scrubbing brush, and take morning draughts of fresh air. Let her use fine soap, and hot and cold water alternately in washing her face at least once a day. Warm water alone will make the skin flabby. A great deal has been said about the injurious effects of water on the face. It is all nonsense. Water and soap are as beneficial to the face as to other parts of the body. Plenty of outdoor exercise and the free drinking of water will work wonders in the way of improving a muddy and greasy-looking complexion. The daily bath keeps the skin clear and pure, the flesh firm, and the limbs elastic. The liberal drinking of water cleanses the stomach, keeps the internal machinery clean. The long daily walk renders the liver active, and means a bright and happy disposition. So you see to be healthy and beautiful costs a mere nothing beyond the devoting of a little time to one's self. Many a woman will spend hours over a piece of needlework, or reading some trashy novel, and yet grudge twenty minutes or so extra at her toilet that would render her much more attractive in every way and help greatly to preserve her form and beauty until an advanced age.

Regular exercise is absolutely essential for the maintenance of a good complexion. Just as no woman who denies herself the necessary amount of sleep can long continue without seeing lines and crows' feet marks appear in her face, a woman's complexion also depends much on her disposition, and it certainly is in one's power to ward off wrinkles until long past the fatal time when they are supposed to appear. Wrinkles are caused by the action of the muscles under the skin and attached to it. It is the action of these muscles which give the face its

expression. In the hand the muscles are also attached to the skin, but in the other parts of the body the muscles are not attached to the skin, so it does not wrinkle on contraction of the muscles. These facts at once answer the question so often asked as to why it is that the face and hands shew signs of age, while the body of the average woman of fifty frequently retains its youthful appearance.

The little muscles of the face are a very interesting study. One set is to draw up the corners of the mouth, another to draw them down. One causes the face to look pleasant, the other cross and disagreeable. The muscles make us express every emotion, from fear, anger, surprise, sorrow, to happiness and delight. There are always two sets of muscles, one set to perform an action, the other set to counteract. Hence, when the muscles of contraction are the strongest, the muscles of expansion cannot overcome them, and the person has permanent wrinkles.

Many women seem entirely unconscious of the approach of wrinkles, and rather encourage their coming, by scowling upon the slightest provocation. And let me ask just here—does scowling improve your looks? Does it add to your popularity? Does it brighten your charms? Does it keep you young-looking? Does it make life sweeter? Does it pay? Not while a sunny disposition is the winner as friend-maker and keeper! The making of unsightly facial movements in conversation, is wholly unnecessary, as well as decidedly unpleasant for their friends to endure. A smiling mouth whose corners are persistently turned upward, despite fate, this is among the best weapons with which woman conquers the ravages of Time. Eternal vigilance is the price of beauty, and so the naughty wrinkle must be taken in hand at an early age. "Give a bad child full rein from the time he is born, won't he conquer you," says one beauty doctor, astutely, "so do not expect to remove all traces of a lifetime of neglect." You must take your wrinkle in its infancy; begin its treatment to-day. Wrinkles come from various causes. Age is one remorseless factor, chronic stomach trouble another, and winds, hard water, frowns and grimaces others. All these, without counting the direful results of uncleanness, neglect of proper food, the fatalities of insufficient rest and the terrible consequences of worry. Worry is a frightful destroyer of good looks, and its effect in the expression of the eyes is something to be dreaded, like the tiger in the jungle. Who has not turned away sometimes from the distress of hideously worried eyes, and a face seamed by fretting over petty annoyances? For a great grief seldom leaves these ugly traces, being rather ennobling in its shadow. They result from the trashy everyday nonsense about the butcher, the baker, the candle-stick-maker; the foolish fume over clothes; the envy of the neighbor's ox and ass and all that is hers. In fact, nine times out of ten, it is foolishness which is god-mother to the wrinkle. Put the seam out of your heart first, then look to your face.

The feeding process of eradicating wrinkles begins in this way. The skin is washed in warm water, and then the line is persistently pressed apart with the fingers, while some reliable skin food is rubbed in, and in massage stroke away from each side of the line; a nightly half-hour consumed in this rite will soon show the benefits to be derived; and when this sacrifice to Hebe is over, you will find yourself much refreshed, and the massage has a very soothing effect on the whole system. You must not expect Rome to be built in a day; vigilance, I say, is the price of an unwrinkled skin, and certainly something is gained if the line is only softened to the extent of not showing at a first glance.

A wash with barley water may be highly recommended, for it is to this humble bath that many a dead beauty owed her smooth skin at the age of seventy. This is made by boiling three ounces of pearl barley in one pint of water until the

gluten is extracted. The liquid is then strained and five drops of tincture of benzoin added,

A word regarding baths. Take a cold sponge bath in the morning; you cannot imagine how beneficial it is to the health, and also to the complexion. It gives the complexion a brightness and freshness that nothing else can give. It makes the skin firm, and gives it the rosy hue of health. Hot water baths should be taken at night, just before retiring, as they are very relaxing. Salt water baths are strengthening and hygienic, but should not be indulged in carelessly by those not in good health. Soft water is an important factor in keeping the skin in good condition. Always use a good soap. There is nothing so injurious as a poor soap. Pure soap is as necessary to health as pure food.

Do not be afraid of the sunshine. Curative powers are in the rays of the sun, and they give youth. Let the sunshine into your rooms: it is purifying and health-giving. Never mind faded carpets and curtains—these can be replaced—let in the sunshine, it is life to everybody. Fresh air is so essential, not only during the day, but during your hours of sleep, so have your bedroom thoroughly aired and ventilated. One's sleeping room should be as large as possible, and the windows should always be open, at least one inch top and bottom, to insure a constant current of air. Try and make it a rule to get to bed by ten or ten-thirty. One or two hours' sleep before twelve is worth several hours after twelve. Without good refreshing sleep no woman can appear at her best.

Many women think it weak to take a nap in the afternoon. On the contrary, it is often a sign of weakness if they do not. A nap in the afternoon refreshes one for the time being because of the complete relaxation it affords. It will also help in the retaining of good looks, good health and good disposition. There is nothing that so soon restores the tired nerves as good refreshing sleep. Get in the habit of giving up a few moments at least each day to take a nap, and you may find the necessity for tonics done away with.

The desire to preserve one's youthful looks as long as possible is a perfectly natural one. It is even commendable, and the mother, in particular, is wise who seeks to retain her youthful looks and feelings. A woman has a right to seek to look young for the sake of her husband and children. It is, in fact, her duty not to allow the years to leave any more marks than are necessary; and the youthfulness of the spirit should be held on to most tenaciously. Never look on the dark side; take sunny views of everything; a sunny thought drives away the shadows. Cultivate the spirit of contentment; all discontent and dissatisfaction bring age furrows prematurely to the face. Form a habit of throwing off before going to bed at night all the cares and anxieties of the day—everything which can possibly cause mental wear and tear, and deprive you of rest.

There are few things more conducive to health than walking exercise; and one advantage of our climate is that there are but few days in the year on which at some time of the day it might not be taken. Walking—I mean a walk, not a stroll—is a glorious exercise; it expands the chest and throws back the shoulders. It strengthens the muscles and promotes digestion and is better than any aperient pill ever invented; it clears the complexion, giving roses to the cheeks, brightness to the eye, and in point of fact is one of the greatest beautifiers in the world. If women would walk more than they do, there would be fewer useless complaining wives than at present.

Now you see beauty and health depend largely on our daily walks, daily baths and fresh air, and certainly these are free for everyone.

WHO IS RESPONSIBLE?

By Mrs. F. W. Watts, Clinton, Ont.

What shall we do with the boys? This is the question that comes to us time and again, as we see bright, active lads indulging in habits that certainly must render them less capable of filling positions of trust in the years to come and also materially injure them both physically and mentally.

The other evening as I was going up town I passed a doorway at the side of a store and on the doorstep sat four small boys (you can well imagine they were not very large when four could sit on the doorstep), each one puffing away at a cigarette, and as I passed, I overheard one of them remark, "This is my sixth cigarette to-day." I felt constrained to stop and talk to them and try to show them the awful mistake they were making in abusing their little bodies and brains in such a manner, but—I didn't, why? Well, those boys have parents and we ofttimes find that parents object to having their children remonstrated with, even though they are doing wrong. Then again, children nowadays, in many cases, are not taught to show respect to their elders, and the chances are I would have met with nothing but impertinence. I thought, *who is responsible?* Where are the mothers of those boys, and why do they allow them to be out on the streets in the evening? They should have been in the home around mother's knee listening to some fascinating tale, or a chapter from some good book, or perchance, best of all listening to mother's voice as she endeavors to impress upon their young minds the evil results that will surely follow the indulgence in any of those pernicious habits. Surely the parents are to blame to a great extent for much of the misconduct of their children. Children are born imitators and it is the most natural thing in the world for a boy to imitate his father, and think, if he can do as daddy does, he will be a man sure. Yet how inconsistent some fathers are, doing every day the things that they would punish their children for doing. I once saw a father shake his little son for swearing, telling him, with an oath, what he would do to him if he heard him at that again. That father surely deserved the lash, for the boy was only a mite of three or four years who did not understand what he said, but was only repeating his father's words.

Then again many parents do not appear to make any attempt to inculcate in their children that true sense of honor without which no boy or girl can ever become truly great. Petty meannesses are treated as jokes and thus encouraged. A case of this kind was brought to my notice one evening this summer while attending a lawn social. Shortly after entering the grounds we noticed two young men steal in by climbing over the high-backed seats which had been placed along to form a fence. I said to my lady friend, "Well, that does not show very good principle to say the least; but I presume they are saving their dimes for refreshments." It was only a few minutes, however, until the same boys attracted our attention again, this time by pulling the green apples off the trees and throwing them among the crowd, not knowing or caring, who they might strike or what harm they might do. As they came to a young tree near where we sat, the son of the owner of the premises remarked that this was the first year that tree had borne fruit and they were anxious to see what it would be like, so he walked over and the boys passed on to the next which was close beside us. As they pulled the limbs down to reach the apples, I said to them, "Green apples are not on the bill of fare to-night; you should leave the trees alone." I received a very indifferent reply. However, they sat down for a few minutes, evidently to think out some

further mischief, as it was not long before they were over at a booth snatching oranges and any fruit they could get their hands on. Later on one of the management committee overheard them planning how they would walk up and pretend to buy, but instead would knock off the clerk's hat and when he stooped to pick it up they would grab all they could and run. Of course the gentleman who heard the plan accidently arrived at the booth at the same time as the boys and so prevented them carrying out their plans.

I know a great many people would regard such conduct as a *practical joke.* Yes, they might even consider it as *smart;* but I regard it as downright dishonesty. *Stealing* is the proper word in plain English and, as long as people are pleased to wink at such conduct, just so long will boys be convicted of embezzling. misappropriating bank funds, etc. What else can we expect? Had they been poor boys, I presume they would very quickly have received a severe reprimand and been sent out of the grounds, *but* they belong to *respectable families.* True, their fathers frequent the clubroom and their mothers spend their afternoons playing cards for prizes, but what of that? Who shall dare to say that they and their boys are not all right? Had those boys been arrested on a charge of stealing, their parents would have been highly indignant. Who is responsible? Oh! the pity of it.

Cannot something be done to make parents realize their responsibility and show them the necessity of teaching their children by precept and example. (the latter is, to my mind, the more important of the two), to be true, pure, honest and honorable in every thought and action, doing nothing that would cause a shadow of reproach to fall upon them. In short, to be genuine. I like the ring of that word genuine. It sounds solid and reliable, a something you can safely lean upon, and what prospect of a bright, noble, honorable career can any boy have unless he be genuine.

Fathers! mothers! awake from your slumbers of unconcern. See to it that you are setting an example for your children that is worthy of imitation. Know that they are naturally following in your footsteps. See to it that those footsteps do not take them into questionable paths that may lead to disgrace and failure, but rather itno a life that will be bright with a halo of purity and honor, that they may be a comfort and credit to you, a crown to your old age. "A good name is more to be desired than great riches."

If I can lend
A strong hand to the fallen, or defend
  The right against a single envious strain,
My life, tho' bare
Perhaps, of much that seemeth dear and fair
  To us on earth, will not have been in vain.

THE HURRY, WORRY AND WASTE OF MODERN HOUSEKEEPING.

By Mrs. J. E. Brethour, Burford.

What an age of hurry, scurry we live in—the day is not long enough for all the occupations we try to crowd into it. Consequently our minds are in a state of mental turmoil, and hurry begets worry, and, although we vainly endeavor to make every moment count, our very haste begets waste. thus defeating our own ends and we fail to accomplish the very things we had laid out to do. Such lives are rarely happy and more rarely successful. A friend of mine who was forced by circumstances to lead a rather strenuous life, and seeing a particularly trying time ahead

of her and feeling she must have a tonic to brace her up, went to her doctor and told him she must have something for her nerves. Being a sensible friend, as well as a clever doctor, he looked at her steadily, remarking, "You do not need medicine —take care of yourself, don't hurry and, above all, don't worry, and take plenty of rest," which seemed good enough advice, but rather hard to follow. However, being a sensible woman she did so as nearly as possible; and we all know the folly of crossing our bridges before we come to them, and the troubles that never come are hardest of all to bear. Those who have read, or better still, have heard Martha Van Rensselaer give her address on "Saving Steps" must remember her graphic description of the days when everything goes wrong; when the fire won't burn, or burns too much; when the bread won't rise, or runs over before we can get it in the pans. That is the time to go in the sitting room, sit down in the easiest chair and reflect as to where the fault lies, with the stove, the bread or ourselves, and ten to one it is within. Hurry is generally the result of mismanagement. It shows a lack of control either of ourselves or circumstances. It is all very well to say "circumstances over which I have no control," but now is the time to rise above circumstances and become master, or rather mistress of the situation.

Hurry begets worry—worry so often follows close on the heels of something unexpected turning up. What is worry? A professor in one of the colleges or universities of Boston has written a book on the subject and gives the best definition I know of—"Worry is a state of undue solicitude," and adds these lines— "Why worry? The duck's legs are short—the stork's legs are long. We cannot make the duck's legs long, neither can we make the stork's legs short, why worry?" All housekeepers do not worry about the same things. It is for each of us to find out our own special weakness and overcome it before it becomes so deeply rooted that it affects our happiness and possibly those around us. The unexpected guest fills the hearts and minds of some with such consternation that they almost forget to extend a fitting welcome. The moment their friend appears in sight they begin to wonder what "extra" they have in the larder. Give them a warm welcome and while they are laying aside their "bonnet and shawl," if absolutely necessary to make any addition to the family meal, think quickly and quietly, and act on the same principle, so that your guest will not dream you have made any change on their account, for what could be more embarrassing than to discover that, instead of giving our friends pleasure, we have caused them extra hurry and worry.

While having as much regularity and method as possible in our household arrangements and work, do not have them resemble the laws of the Medes and Persians which altered not. When there is only one woman in the house, it would quite stagger her to sit down and contemplate the one thousand and ninety-five meals to prepare in a year, besides extra lunches, etc., but on the other hand, when she considers they only come one at a time, and remembering the promise "As thy day, so shall thy strength be," it does not seem so appalling; and I would like every busy and over-busy housekeeper to look within and she will probably find that these very every-day meals are the cause of much of our hurry and worry, often caused by lack of system and sometimes by lack of adaptability. When too many "unexpecteds" happen, change your plans, cut something out and avoid the wear and tear on nerves and body which is sure to take place. Few can stand the constant strain of housekeeping without an occasional change of scene or a little outing, for who has not felt—

"Oh for the gift of a pair of wings
To bear me out of the reach of things—
Things to boil, and things to bake,
Things to mend and things to make."

And this brings me to the last clause of my subject—*Waste.* Many good housekeepers would be quite indignant if we so much as hinted they were extravagant and yet they are wasteful every day of their most valuable assets—health and strength—which, owing to the contrariness of human nature, we never prize while we are in full enjoyment of the same. No hard and fast rules can be laid down as a remedy, the cure must come from within. In the present day when it seems to be a case of poor help, or no help, a duty every woman owes to herself and family, is to take the best possible care of herself, and no woman has the right to live at such high pressure that she is never at her best either mentally or physically. The old copy books were full of such proverbs as "More haste, less speed," "Wilful waste makes woeful want," etc., and they are quite applicable to us. If we are to get any pleasure out of our housekeeping, we must cut out the non-essentials, reduce our work to a system, and live up to our privileges, and resolve to have less hurry, worry and waste in our housekeeping.

WORRY IS WORSE THAN WORK.

By Mrs. J. B. Fraser, Annan, Ont.

Worry has been called "woman's worst emotion." It is almost unnecessary to define or describe it. It takes most often the form of vain regrets over past mistakes and groundless fear of the future, a morbid distress over what is past or what might have been, or a vexing and distressing anxiety as to what may never be. It is a sign of weakness and a type of fear which may take hold of an otherwise healthy mind, but which, if indulged in, may in time lead to serious derangement. According to an eminent authority, "It is the one great shortener of life under civilization," as it certainly is one of the things that makes life less worth living. Of all forms of worry, the financial is the most frequent, and for ordinary minds the most distressing, though there is almost nothing that the worrisome do not worry over.

The philosophers would comfort us with the reflection that to worry is the *prerogative* of humanity. The animal does not worry. This is evidently the thought of the poet Shelley, who envies the sky-lark his power of giving himself up to the joy of the moment, and contrasts therewith his own unhappy faculty of sorrow.

> "We look before and after
> And pine for what is not,
> And our sincerest laughter
> With some pain is fraught."

Often, worry is one of the results of over-work, oftener still of ill-regulated work, but oftenest of all of an ill-regulated and discontented mind.

Work may be defined as the continued application of strength or energy of mind or body in the accomplishing of some task. There are many kinds of work, and at least two kinds of workers; those who are interested in, or in love with, their work, and those who do it merely from a sense of duty or under the compulsion of necessity. Work that we have to make ourselves do is, of course, much harder than work we delight to do, whether it be head work or hand work. One may have a task that calls for close and keen attention, although in the doing of it one may not be called on to move hand or foot, which may tire one more than

work for the same time, straining every muscle of the body. It is related of a young soldier, who was set to watch a hole in a wall, through which a spy was expected to creep, that, after watching for an hour with his rifle cocked and ready to shoot, he said he did not remember ever having had so fatiguing an experience. But, easy or hard, work is less wearying and wearing than worry, which is as bad for one as grinding without grist is for a mill.

Worry is a morbid exercise of mind and nerve, resulting always in excessive strain and consequent wasteful expenditure of energy and exhaustion of vitality, without any consequent healthful reaction; leaving the one who indulges in it or who has come under bondage to it wearied without work, irritable without warrant, and most unreasonably depressed.

Work, on the other hand, within the limits of one's strength, is healthful exercise of the bodily and mental powers, ensuring the enjoyment of the luxury of rest and sound sleep, and resulting in the renewal and increase of the energy expended. Exercise, which may be regarded as a form of work, is universally acknowledged to be essential to good health and to the highest development of the utmost vigor of mind and body. Indeed, there are those who say that even those who work hard would be the better of systematic exercise, in addition to their work. Those who train for athletic contests work harder than most of us, simply to make sure that they will be at their fittest when the day comes, and they are never in better health or spirits than when they are training.

Worry is worse than work, in this, that we may worry all day and have nothing to show for it, whereas, if we work for an hour we are almost certain to accomplish something. If worry ever accomplished anything, it would be easier to make some allowance for it. It not only fails of useful or practical result, but its effects, on those who are a prey to it, are most distressing and lamentable.

The worst of all kinds of worry is worry over one's work. Those who have tried to ride a bicycle will remember that the more they worried, for fear they would run against any object, the surer they would be to strike it, no matter how hard they worked the pedals or handle-bars to avoid it. If worry beforehand does not help matters, and worry afterwards is still more silly and useless, the sooner this weakening leak of vital energy is stopped, the more strength we will have for the doing and enjoying of our necessary work. One of the world's busiest men, of his day, accounted for the amount of work he was able to get through by the fact that he did his work but once, while many people worried over their's both before and after they did it. There is both philosophy and religion in this method.

"Don't cross the bridge till you come to it." "Sufficient to the day is the evil thereof." But, someone may be thinking it is all very well to quote proverbs; what we would like to know is how to stop worrying. There has been a good deal written, lately, of a new method of treating nervous troubles, from which we may perhaps learn something. The idea is to work through what is called the subconscious mind. The subconscious mind is the mind which works while we are asleep, as well as while we are awake. When the conscious mind is calmed, and, as far as possible, inactive, the line of thought which is contrary to the one which is the cause or the result of the trouble is repeatedly suggested. This may be done as one is just falling asleep. Just before falling asleep at night, or when waking in the morning, are said to be the times when auto-suggestion is most effective. Many have learned by sad experience that worrying about anything, before falling asleep, is liable to persist through the night and to result in a restless sleep, disturbed by distressing dreams. The aim of auto-suggestion is to substitute hopeful

thoughts, which will displace the troublesome thoughts, and cause the wearied troubled one to wake up relieved, refreshed and encouraged, It is said that one who was a victim of worry, and who found herself often exclaiming, "Oh dear!" with a burdened sigh, was led to think of the many reasons she had for gratitude and to resolve that instead of "Oh dear," she would say, "Praise the Lord!" This she did, often repeating the 92nd Psalm for her encouragement. She soon improved in health, overcame the habit of sighing, and became as cheerful as she had been doleful before.

This is a kind of faith-cure that is open to anyone who is wiling to try it, who has faith in the wisdom and goodness of an over-ruling Providence, and in the effect of suggestion on the subconscious mind. But, whether we try it or not, if we would be sane and sweet and strong, if we would be happy and make others happy, if we would be equal to our work and successful in it, we *must not* worry. We need not and we should not.

THE USE OF BOOKS.

By Miss Helen McMurchie, Harriston.

Books place the means of education within the reach of all. Carlyle it is who says that nowadays, books constitute our true universities: while we have also the recent notable example of President Eliot who proposes to name a five foot shelf full of books, the intelligent reading of which shall be in itself a liberal education. Whatever other educational opportunities we may have been denied, books may become to all of us the gateway to richer intellectual life.

Hence the *choice* of books is of prime importance. The prodigal supply available makes discrimination in selecting both a virtue and an art. Our forefathers, nurtured on the Bible and Pilgrim's Progress, attained to an intellectual stature for which we often sigh. While it is neither possible nor wise for us to thus limit our range of choice, we may, nevertheless, abide by the rule (in their case an admirable necessity), of reading only that which is of worth. It is safest to read those standard works of which Time has approved, and in so doing our tastes will be formed so that later we will be able to measure and judge newer works by these recognized standards. It is of course impossible to lay down hard and fast rules as to reading, still there are some points that we may need to have recalled, and it is with a view to giving some practical suggestions in this regard that this paper is written.

A word first as to magazines; they figure too prominently in our reading to be passed over lightly. Much of the fiction that appears in our periodicals is worthless, though there are, of course, stories of the best sort mingled with the poorer element. The prominence of the short story is a notable feature of our modern magazines; it renders them particularly adaptable for recreation, a pleasant diversion for an odd minute. This appeals to the busy housewife who often finds herself free for a few minutes and willing to be amused, but too tired for anything that demands sustained or careful attention. Another important function of the magazine is to keep us in touch with current happenings, presenting the news of the world in brief form and with critical estimates that the daily paper does not attempt to give. A magazine of this nature is always worth having—"World Wide," "The Literary Digest" and the "Review of Reviews" are examples

of this type. Then we have magazines devoted to the particular interests of the home and the farm, and these are necessary in order that we may keep in touch with progress in our special departments of work. I should say that there should be in every farm home at least one agricultural paper, a woman's journal, a current review and, possibly, a magazine containing fiction of the better class. In towns, public libraries place magazines within the reach of all, but in the country no such facilities are available. The purchasing of magazines, however, should not be regarded as an extravagance. It is an investment which will yield well in the information gained and in the added attractiveness of the home.

To come to the main question of books. Every house should contain at least the nucleus of a library. I have been in houses where not a book was in evidence and I have reflected with wonder at the intellectual barrenness thus revealed. Better far to have plain clothes and shabby furniture than to be without books. The former are but outward habiliments, the latter are the food and raiment of the mind. The best works of English literature can be obtained now at most moderate prices in a variety of editions. There is, for instance, the People's Library of one hundred volumes at nineteen cents each. I have a selection of Browning's poems in this edition, and I often wonder at the thought of so rich a treasure for nineteen cents. Then there is the Universal Library, Collin's Classics and, most extensive of all, the Everyman's Library, which comprises not only fiction, but history, biography, poetry, philosophy, etc. These books are twenty-five cents, bound in cloth, and in leather, forty-five cents.

The collecting of a library yields the greatest pleasure. What better thing than to start a child out with the present of a few good books to which he may gradually add as time goes by. It will be worth more to him than money—a constant source of joy and profit. He who has not experienced the rapture of holding a long wished for book in his hands at last has missed a great delight.

Traveling libraries bring within reach of people in the country books which might not otherwise be obtainable. I have visited Institutes where the ladies were enthusiastic over the libraries which they thus obtained by application to the Department of Education.

Individual taste must govern us largely in the selection of books, yet it is not wise to follow our inclinations too readily. For instance, most of us need to exert some strength of will to apply ourselves to books of a more serious order instead of works of fiction, the tendency often being to read stories alone. That is too much like living on sweets and spices; we need a more substantial diet as well. It is a good rule to read two serious books for every one of fiction. Then, too, there is nothing which so repays one as writing out a short summary of each book as read, along with a few notes containing one's impressions of the book. Nothing so clarifies in one's mind what has been read. There is a sense of mastery over the substance of the volume. Then, too, it is interesting, if these notes are kept in a book, to turn them up in after years and compare past ideas with those of the present. To undertake some systematic course of reading is an excellent way for those who have the leisure. The Chautauqua course is probably the model in this regard, and nothing is more worth while than to read the four series of books which it provides.

The standard works of fiction should always be read: Scott, Dickens, Thackeray, Eliot, Jane Austen, Charlotte Bronte, Kingsley, Trollope, etc. Naturally, in recommending books one can speak only from an individual viewpoint, but I have tried to select the names of several books, stories which, it seems to me, convey a good general impression of the mode of life of the times which they describe, and

are valuable, therefore, as giving us a vivid presentation of various epochs of history. These books are: Lytton's "Last Days of Pompeii," Reade's "Cloister and the Hearth," Charles Kingsley's "Alton Locke," Dickens' "Tale of Two Cities," Meredith's "Diana of the Crossways," Hardy's "Return of the Native" and Kirby's "Golden Dog," a story of French Canada. This list is manifestly incomplete, but I suggest these books because I have found them all to convey with peculiar power the atmosphere, the mental attitude of the time in which the story is laid.

For intellectual stimulus, poetry and the essay must be sought. The study of Shakespeare might well be encouraged, and there is no reason why a Dramatic Club organized in a neighborhood should not study one of the plays, perhaps producing it at the end of the course. Palgrave's "Golden Treasury of Verse," available in several of the editions of books mentioned before, is a collection of short poems arranged in historical sequence. It contains all that is best among the shorter songs of our poets, excepting some more recent writers—Browning for instance. The person who has read the Golden Treasury carefully should have a good general idea of the development of English poetry. No form of writing is more stimulating or more fascinating than the essay. Prominent in this class are those of Emerson, Carlyle, Ruskin, Matthew Arnold.

No person can claim to be well informed who has not a grasp of English and also Canadian history. Green's "Short History of the English People" is the most interesting to my mind of English histories, while of Canadian histories Roberts' "History of Canada" is concise, yet entertaining. Nor must the well read person neglect biography so closely interwoven with the annals of politics, literature and art. Biography recreates for us the great men of the past and throws new light on the problems of their times.

I had almost forgotten travel and adventure. Yet at the mention of this the name of Robert Louis Stevenson comes up. How great is the loss of that person who does not know the writings of this incomparable genius, this prince of adventurers, this sweet and chivalrous spirit—Stevenson. English literature is wonderfully enriched by his works, and they are of a character that all will appreciate and enjoy.

There are a few religious books to which people of all faiths turn alike. Thomas a-Kempis' "The Confessions of St. Augustine," and, above all, the Bible. The Bible, considered as literature alone is well worth our most careful and constant study. It is the source and inspiration of all that is best in our literature, and any decline of interest in the pages would mean certain deterioration in our national writings. It should be studied and prized among us more than it at present is, and the person whose tastes have been formed by reading the Bible will not be likely to err in the choice of other literature.

The question of children's books is one of importance. Parents have a great responsibility in this regard. Especially should they see to it that all harmful literature is kept out of children's reach, even if this should mean the avoiding of a newspaper, for instance, which publishes a colored supplement. Such reading is anything but elevating for children, or for grown people either. Parents should take an interest in what their children read, reading to them and with them, and seeking to direct their interest in right channels. Small children will enjoy poetry long before they are able to fully grasp the meaning. If a few lines are read every night at bedtime, it will be a treat to be looked forward to all day and a valuable training in poetic taste as well. "Hiawatha" is suitable for such reading, as are also Eugene Field's poems and Robert Louis Stevenson's "Child's Garden of Verse."

Ruskin says to turn a boy or a girl loose in a good library and let them choose for themselves. The books which they prefer may surprise our tastes, but, provided all harmful literature is kept out of the way, we may trust to them finding that which is adapted to their particular stage of mental development. The duty of the parent is not so much to dole out desirable books like those of medicine, as to encourage the child in the cultivation of right tastes and then leave him to select for himself.

Among a great number of delightful books for children it is hard to discriminate, but there are a few generally recognized stories which every child should read. Such for example are, Hawthorne's "Wonder Book and Tanglewood Tales," Kingsley's Greek stories and "Water Babies," Hans Andersen's fairy tales, Carroll's "Alice in Wonderland" and "Through the Looking Glass," Mrs. Hodgson Burnett's "Little Lord Fauntleroy," etc. There is also a series of books by Clara Dillingham Pierson which children will read with enjoyment and profit. They are called "Among the Meadow People," "Among the Farm Yard People," etc. Each book consists of a series of stories of the animals, birds, insects, etc., found in the forest, the farm yard, the meadow and the pond. These stories are charming reading and incidentally considerable knowledge is gained.

To read books aloud in the family circle is an excellent practice. There is certainly nothing more pleasant than when the whole family gathers together in one circle in the long winter evenings, the mother and girls with their sewing, while the father or some other member of the family reads aloud. The old familiar books should be read then; the parents will enjoy renewing their knowledge of them and the younger people will make their acquaintance with such books guided by the comments and discussions of the elders.

Already I can fancy I hear someone saying "There is no time for all this, we are too busy to read." My answer is this. We are given in this life a certain amount of capital in the shape of time and opportunity and it is our bounden duty to make of this the most that we can. We should, therefore, decide what things in life are really worth while—what are the important matters to which we should devote ourselves, what the non-essentials which we may safely neglect. Then, having settled this question, we may proceed to bestow our energies on that which, in our estimation, is most worthy. Determination will generally enable us to find leisure for that which we are really bent on doing. If we consider the possession of money, or its equivalent, of prime importance, we will bend all our energies to its acquirement and the chances are ten to one that we will succeed. If we regard the development of our intellectual and spiritual nature as worthy of care, we will probably succeed, only we must remember that this may mean the surrender of some less cherished good. We may have fewer fine clothes and less money in the bank and may be driven to ingenious devices for crowding a little reading in with our daily tasks, but we will eventually receive our reward, not in worldly coin, but in added riches of the spirit. The question of time for reading simply widens into this broad problem—Are we to give our time and energies to the pursuit of material things or to the culture of things spiritual? It was said once that a man could not serve two masters. This still holds true. The great question before us is the choice of a controlling aim in life. The quest of worldly riches seems to absorb most of the energetic people of this young land; genuine devotion to a more unworldly life is rare. A false view of success has obscured our vision and the delightful arts of life, the love of simple things, the fondness for quiet thought and reflection are disappearing before an all-absorbing desire for worldly possessions. Books ever wait in the path of reflection and those who, leaving vulgar ways,

choose the pleasant walks of wisdom and quietness will find them set like lamps to light the way to the realms of imagination, of cheerful enjoyment and sane thought. The question is, which path shall we choose?

COUNTRY HOMES.

By Miss B. Duncan, Emery, Ont.

Those who have reached years of maturity and recall conditions as they existed in the pioneer days of our country, could scarcely believe it possible for such changes to take place in country homes in so short a time. The early settlers were content with a log house of small dimensions, but few of their grandchildren would be satisfied to bring a bride into such a humble abode to-day. Not many would care to hew out a home for themeslves as our grandparents did in the early days. People prefer rather to begin just where their parents left off after long years of struggling, and seldom do they realize what such struggles cost.

The introduction of machinery on the farm gives to us one of the reasons why so many left their country homes for city life. Up to that time a great many men were required to harvest the crops, but with the invention of machinery the number required was lessened, consequently these unemployed must seek employment elsewhere, and the most likely place would be in the city where these implements were being manufactured. Another reason might be that city life appeared to them more attractive than country life. This may have been true in early days, but is it to-day? Is it not an improvement of rural environment which is tempting many to return to country homes? Traveling through the country, one finds a great many changes in the past few years—trolley lines, telephones, rural mail delivery, etc.—these are the improvements which make the city extend out into the country, and make our rural homes more desirable.

One of the first points in selecting a home would be to consider the aims of the individual members of the family. All the family may wish to live in the country, yet some may like to be near enough to the town or city that they may go to business and yet enjoy the privileges of a country home. Therefore, it would be well to select a place convenient to town or village, and just large enough to be cared for by the family without incurring an expense greater than the yield.

The situation of the house is very important. There are instances of homes, built on that part of the land which is not of much use for cultivation—probably near a swamp. That is a mistaken idea of economy. We want good surroundings for our homes, and commanding as beautiful a view as possible—a site high enough to afford good drainage, but not necessarily the unprotected hilltop. All situations have their advantages and disadvantages, and these should be thoroughly considered before a final decision is made.

The general appearance of a house expresses the individuality of the man, and to walk through each apartment only corroborates one's views. From the outside one can judge whether he is neat, orderly, or artistic, or whether he cares nothing for the elements of neatness and beauty. His parlor indicates whether he cares more for show or comfort, his library reveals the character of his mind, and by the furnishing of the dining room and its viands, one can judge whether he loves the pleasures of sense more than a strong body. It is unnecessary to see the man to have a fairly clear idea of him.

A country home should not be a city house transferred to rural surroundings. In the city the houses are crowded together and are usually long and narrow. Such a house standing alone in the country, unprotected by trees, would give one the impression that a good strong blast might blow it down. A more solid looking house, protected by a few trees, is more desirable for the country. It should be of as good construction as possible, and planned to be convenient. Many of the country homes which were built years ago are not very convenient, and one must take a great many unnecessary steps in doing the work of the household. A little money spent on alterations to improve these household conditions would be a wise investment. There is no reason why the housewife should not have conveniences to save her time and strength, even as the farmer has all the labor-saving machinery on the farm to lessen his labor. Not always is the husband at fault. His wife toils from early morn till late at night, simply because she is content to go on in the same way year after year, trying to do with what she has, rather than incur a little expense for labor-saving devices.

Too often the parlor is given more thought than the kitchen—elaborate furnishings, and anything that will make a show are to be found there, while out in the kitchen, where the housewife has to spend most of her time in looking after the needs of the family, there is nothing to lighten labor, and everything to make her cross and irritable. Why should this be? The time is coming, yes, is at hand, when women are waking up to realize that labor saving devices are as necessary for women as for men, and are insisting upon having them in their kitchens. In many farm houses we find large kitchens which are used as kitchen and dining room combined. The small kitchen conveniently arranged is preferable for lessening labor. Having it separate from the dining room is desirable. Why not have a partition put up to make two rooms of the large kitchen, and it will not require as much labor to do the work, and meals will be more appreciated in a cool dining room free from the odors of cooking, than in a hot kitchen?

In building a new home, it is well for the housewife to be consulted about the plan—for who should know better than the woman who has to live in it and do the work what will be most convenient for her. A careful study should be made of the plan before any work is begun in the construction of the house. It is much easier, and costs less to make alterations in the plan before it is made into a house, than after.

Sanitation and ventilation should be carefully considered too before building operations are begun. To enjoy good health we require plenty of fresh air, hence a good system of ventilation is necessary.

The number of rooms in a house depends on the size of the family to occupy it. It shows poor judgment to have so many rooms that some of them are never furnished. And a worse fault is to furnish them so elaborately that the members of the family are afraid to use them. What is more aggravating than to go into a parlor to wait for a friend, and find everything so stiff that one is afraid to pick up a book to read while waiting, for fear it might not be replaced at exactly the same angle Why not have everything for use, and not so grand that we cannot enjoy them?

Above all, simplicity should predominate. The less carved furniture and fancy ornamentation in the home, the more easily it can be kept clean and sanitary. Therefore, in purchasing it is well to keep this point in view, as it will require less of the housewife's time and strength to keep it in perfect condition, and will give her more time to spend in reading and recreation. It is possible to have simplicity, too, in all the home decoration. One does not need to get expensive

materials to have pleasing effects. Some of the less costly materials give just as good satisfaction. Because one's neighbors have expensive articles in their homes, is no reason why one should have them too, providing one cannot afford them. It shows wisdom to always live within one's means.

Nor should the color scheme be forgotten. Harmony of color is very important, and has a great influence on refinement in the home. Each must use her best judgment as to what is the best color for each particular room, what are the most appropriate furnishings. A few good pictures must, of course, not be forgotten.

Having considered the home itself, one must not forget the outward surroundings. The country affords more space than the city to show off a beautiful house. The beauty of many a city home is overlooked by being situated so close to the street, and hemmed in by other houses. In the country we are not so crowded for space, and can have a lawn, garden, orchard, and probably a tennis court, where use, beauty and pleasure may be linked together. Here there can be much artistic taste displayed in the arrangement of these outward surroundings. The back and front lawns might be separated by a hedge, grape arbor, shrubs, or even a wire or board fence covered with vines. While the back yard may be screened from view in this way, it does not follow, however, that it should be a "catch all" for ash barrels, tin cans and all kinds of rubbish. On the contrary, it should be as carefully cared for as the front lawn, and made, as the poet says, "A thing of beauty and joy for ever." It costs very little for shrubs, vines and seeds to beautify the home surroundings, and they certainly afford much pleasure for young and old. A combination of low-growing and high-growing plants and shrubs can be arranged to give pleasing effects for the whole season, by judiciously having the low-growing placed in front of the high-growing. They should be arranged with a view to having a succession of bloom, with colors together which will harmonize instead of clash.

After all, it is not "four walls and a roof" that are of so much importance in the making of a home as the life within. Each member of the family can add his or her share to the pleasures of home life. Preferably the simple life is best, and this rests with the head of the house to see that everything in the home is convenient, simple, useful and necessary, and that some definite plan exists for doing the work, with a view to having more leisure time. The same arrangement for a week's work may not suit in any two houses, so that each must think for herself. There should be a time for meals, and each should put forth special effort to be punctual. Those who prepare wholesome meals and have unkind remarks passed about the food by people coming in late when things are not just as nice as they were at the appointed hour, will realize the necessity of punctuality at meals. This could be taught to children to make the household affairs run more smoothly and more harmoniously.

Usually, in the country, people are very busy and find, or rather take very little time for reading. There should be at least a little time each day to keep abreast of the times, and every home should be provided with a newspaper, and some good magazines and books along lines of interest to the family. In the living room should be found every possible comfort provided for the family when they meet during their spare moments of the day, to enjoy a quiet hour together. Nor should music be neglected. "Music hath charms," and those who have a talent along that line might be allowed to cultivate it as far as means will permit. Some of the simple airs are, in many instances, more pleasing than classical music, and add much to the entertainment of the home. There are a great many games

and means of affording amusement, and it is the duty of every mother and daughter in the home to do her utmost to make life there attractive, so that the husbands and sons may anticipate a pleasant evening around their own fireside, and then they will not be tempted to look for pleasure in undesirable places.

Country homes and country life impress many of our city friends as very dreary and monotonous. To those of us who have grown up with the freedom of country life in our veins, away from the smoke, dust, and noise of the city, where the beauties of Nature surround us, where fresh air and sunshine are abundant and free, the prospect of giving up such luxuries for a city home with its cramped surroundings calls forth considerable sacrifice on the part of one who has enjoyed these country privileges from childhood. City life affords advantages which one does not get in the country, but too often people overlook the comforts with which they are blessed in the country, and seek city life with all its rush and glare. There is too much discontentment in the world, a constant desire to suddenly gain wealth, but after all, of what use is it if one has not health? An abundance of fresh air, sunshine and good food are three essential factors in health, and where can they be gotten better than in the country? To teach children the necessity of these and interest them more in their homes is important, and a step towards carrying out our motto "For Home and Country."

HOW TO MAKE THE INSTITUTE A SUCCESS.

By Miss Lulu Reynolds, Toronto, Ont.

There are no hard and fast rules to lay down in order to make the Institute a success. One thing is absolutely necessary, discretion in organization.

No Institute should ever be organized before the people thoroughly understand it and its work, and desire to have one. It is never wise to organize until one is wanted. An Institute may and has succeeded in a great many places where organization has been forced; but it has meant hard work for one or more of its members. It is usually better to hold one or more meetings in the locality, with the assistance of a delegate from the Department of Agriculture, or members of the different branches in the District may provide the programme and place before the women present the aims and objects of the work.

In organizing an Institute the members should never be told that there is no hard work in connection with it. No greater mistake can be made. It certainly means hard work too often for the few, and the more who become interested the more progressive the Institute. The workers, however, are the ones who receive the greatest benefit wherever we may apply it.

One thing which makes a great many women hesitate to join is the obligation under which they feel themselves placed. They realize there is work that must be done by someone, and they, if members, feel they must do their part. Those ladies, if they can be induced to join, are going to be among its best members; but it requires tact in securing their names. It is not always wise to press the matter. Get them interested. Invite them to the meetings and draw them out, if possible, in the discussions. They then in time will give their names in as members voluntarily.

The meetings must be made interesting, and that depends largely upon the officers. The first requirement is an energetic and enthusiastic secretary, one who has tact and a fair education. She must attend the meetings regularly and transact

the business promptly. When an Institute has a good secretary, they should retain her as long as possible.

One point about which some secretaries are not particular enough is taking full minutes and reading them intelligently. They should be taken down fully at the meeting, then copied into the minute book, where they can be arranged and worded to make the most interesting reading.

A president must be an officer who can control a meeting, one who can speak loud enough for all present to hear. She must have good judgment, and, while she should not be afraid to express her own opinions, these should not be forced upon the society. One trouble in a great many Institutes is that, during discussions, all the members talk at once. So many good discussions are spoiled in this way. The members will talk to their neighbors instead of to all present. Usually what they say is well worth all hearing; but it is lost to all but one or two. The members should try to overcome this serious fault. If they would have a pencil and paper, and write down any ideas that come to them, then when an opportunity is given, they may express them to all present. Too often in a discussion members forget unless they can speak at once. By using a pencil and paper they have their thoughts in shape when their turn comes.

The Institutes are a miserable failure as regards opening their meetings at the time appointed. If the ladies cannot get out at the time appointed, set a time that they can, and open the meetings promptly. This is something to which each Institute should give attention. It is largely a matter of habit and, if the meetings open promptly, the members will soon meet at the time appointed. The social time may be held afterwards. This is a very important part of the Women's Institute and one that needs to be dealt with very carefully. I refer to the serving of refreshments at the close of the meetings. A great many Institutes meet in the homes of the members and, when the Institutes are small in rural communities, no doubt this is a good plan. There seems more sociability when there is a hostess to meet the members and bid them welcome: but every Institute should come to some definite understanding on the refreshment question. Have the question well discussed at the representative meeting. Get the feeling of the members, have a motion placed on the books and adhere to it. If refreshments are served, they should be limited. This question may cause much trouble, and, in fact, may kill any Institute, if it is not carefully handled.

Nearly all the Institutes now have printed programmes, and while they are excellent, we have found from experience that we are quite often either avoidably or unavoidably disappointed in papers. Each member should feel her responsibility in this regard and should, if possible, do her part. If impossible, the least she can do is to provide a substitute or notify the secretary in time to secure some one else. So much depends on each one doing her part. Some members are always ready to take, but never willing to give. However, the one who is ever ready to do what she can is the one who receives the greatest benefit. She who prepares a paper receives the greatest good. There are some who feel they are too old, have not had the education and are timid; but they have had the experience which counts for more than anything else. Determination counts for much. If we will to do a thing, we can usually do it.

The problem still arises, What are we to do when we are disappointed in the programme or part of it? The members know what the subjects are for that meeting and some one should be always prepared to fill the gap, when necessary. There are always the faithful few in every organization, and this responsibility falls

largely upon them. Sometimes it is the president, sometimes the secretary, or one of the members, who makes impromptu speeches and opens a discussion. Often when a meeting begins to drag, if one of the members will ask a question it will start a discussion. We all like to give information and, if a number of questions are asked, one at a time, and answered by those present, it will often start a line of thought among the members that will make an interesting meeting.

Each member should come to a meeting ready to take an intelligent part. The sharing up of the work among the members is what makes the meeting most enjoyable.

Good officers are those that can get all of the members to work and keep them working.

Where the Institute is small and it is very hard to have good programmes every month, do not meet as often; but, when a meeting is held, make it interesting. Exchange programmes with other Institutes. Send a delegate to the Convention at Guelph. The more discouraged you are the more necessary to be present. The crowd of enthusiastic members there will wake up the most disheartened member and send her back to her work charged with some of the life and energy that her Institute requires.

THE OBJECT OF OUR BRANCH OF THE WOMEN'S INSTITUTE.

By Miss A. H. Waldbrook, Hagersville.

I think, without fear of contradiction, I may say that the 20th Century is the woman's century. When our Saviour came to this world a little babe, born of woman, it meant emancipation for our sex. For centuries woman had been either the plaything or the slave of man and, if he thought she had brains, he also thought she had no right to use them, but, since the time of Christ wherever the gospel has been preached it has meant the emancipation and elevation of woman, till now in this 20th Century she is considered *almost* the equal of man. I am not one of those who think there should be eternal opposition between man and woman. I think in the Divine economy their interests are identical. With Longfellow I think

> "As the bow unto the cord is,
> So is man unto the woman;
> Though she bends him, she obeys him,
> Though she draws him, yet she follows;
> Useless each without the other."

They each have their own sphere, and for obvious reasons home must always be woman's. It is man's place to be the provider, but it is more difficult to spend wisely and judiciously than to provide the money. The spending of money, however, is only a small part of what devolves upon the married woman. Who will say that she should not be educated and that her intellect and every faculty she possesses should not receive the best training possible? Not only is she the mother of the race, but upon her devolves largely the training of the family. I will call attention to our motto, "For Home and Country." We are all proud of our beautiful Canada, and if she is to take a foremost place among the nations it will be because her mothers have done their duty. It is largely due to the Women's Institutes that Ontario women are awaking to that fact. Not only are the women of the sister Provinces watching us, but the American women have their eyes on us,

too. The Women's Institutes have opened women's eyes to see that to make the most and best of life they must have a sane mind in a sound body; they not only have to think of how they will get their housework done in the easiest and quickest way; how to cook tasty, nutritious and digestible food for their families; how to make the home the most attractive place on earth to their husbands, but that upon them devolves most of the moral and religious training of the children. It is theirs to inculcate good principles. So at this our first meeting it is well to set high ideals before us. Time was when people thought any fool could be a farmer, and, of course, his wife need not be any better; but, in these days of keen competition in every department of business life the farmer has to be up-to-date, and, if he is to win the foremost place among the ranks of his fellows that his calling demands, his wife must be an efficient helpmeet for him.

One speaker recently at one of the Institute meetings said three-fourths of the people in Ontario were farmers and the other one-fourth were parasites, and that it was up to the parasites to see that the farmers made a good living for them. I am afraid you will think I am not making the object of this branch very plain, but, as I understand it, we are all complex personalities, and, while as a matter of fact most women have the faculty for house-keeping in a greater or less degree, so we have other faculties that it is quite as important should be stimulated and strengthened. We are social beings, and it is of incalculable benefit that as neighbors we should meet occasionally and exchange thoughts and ideas. In that way we may each help the others, so that we may each make the most and best of life in this little corner to which it has pleased God to call us. I hope by the end of the year each of us may feel we have been greatly helped and inspired by being a member of this branch.

FEEDING OF YOUNG CHICKENS AND YOUNG DUCKS.

By Mrs. Colin Campbell, Windsor, Ont.

A little of most anything and not too much of anything very well describes the fare required by chicks.

Bread or cracker crumbs, oatmeal, Dutch cheese, are perfectly safe. Hard boiled eggs, recommended by some as sole food, may cause bowel trouble if fed oftener than once a day. Eggs are more digestible if cooked twenty minutes in water below the boiling point. Chopped shells and all with an equal quantity of bread crumbs makes an excellent food for young chicks. Boiled potatoes, raw onions, cooked lean meat, chopped together is good once a day or every other day and makes chickens frantic with delight. Wheat, gravel and bone meal are standards, as soon as they can be swallowed.

A chick is not of the hog family and should not be fed sloppy food. Food should be as dry as it can and be moist. It is well to feed everything as fresh as possible, never cutting vegetables, chopping cooked eggs, nor soaking bread and milk far ahead. The vegetables wilt or sour, the egg albumen hardens and the bread becomes doughy.

The right amount of food is just what experiment proves will be eaten up clean, and remember that only boa-constrictors can stuff and then fast, all other creatures like frequent, moderate and regular feeding.

After the chicks are removed to the brooder, the first thing to give them is grit. Grit must be gotten into the chicks at the start, else they cannot grind their food.

The grit grinds or masticates the food, rendering it fine so that the juices of the stomach may act thereon.

Feed chickens sparingly the first ten days. After the chicks are three weeks old, there is little danger of overfeeding. Then if the conditions are right, the more they eat of a variety of feed, the faster they will grow.

A good mixture is composed of equal parts of corn meal, bran and shorts, slightly dampened with skim milk, either sweet or sour. If skimmed milk cannot be had, it would be advisable to add seventy per cent. of animal meat or cut bone. Always add a little grit to a young duck's food. Mix it in with the mash.

Do not use very sharp grit for ducks. Gravel about the size of wheat is the right size. Oyster shell should be kept before them all the time.

Ducklings will eat twice as much as chicks, but they will also eat almost anything that is given them. Though apparently voracious, they also grow twice as fast as chickens and do not cost any more per pound than chickens as a duckling will weigh four pounds when nine weeks old, if of the Pekin breed.

Cooked turnips, beets, carrots, or potatoes thickened with bran make an excellent meal. Feed them four times a day giving all that they will eat and you can almost see them grow. It is important to mix one part pork scrap or soup with the feed if you want to fatten them. Green food and grit must be regularly supplied without which good results will not be obtained. Ducks require an abundance of fresh air and thrive best on a sandy soil.

SWEET PEA CULTURE.

By Miss B. D. Cleland, Newmarket, Ont.

For the one who is willing to take the time for the cultivation of this most beautiful and most delicate of annuals these notes are addressed. She must have a love for flowers; for, strange as it may seem that things inanimate should respond to the touch of a loving hand, they surely will return in full measure every attention that is bestowed upon them. Our birds, books and flowers are given to us to make this life of ours more beautiful, and to teach us how to live.

It is too late in the season now to make any preparations for this year, but there is plenty of time to make all preparations for next year. After you decide what you are going to have, next plan the arrangement of your garden. Arrange it according to colour as well as size of plants. If your space is limited and you must have the sweet peas (no garden is complete without them) in the same bed as the other flowers, put them for the background.

As our talk is more especially about the cultivation of these beautiful flowers, we shall pass over their early history very briefly. In the eighteenth century they were introduced into England from Sicily, and here were greatly improved and new varieties discovered. Later they were imported into America by the Eckfords and Burpees, who have given us our grandiflora type. Among these are the Dorothy Eckford, a beautiful pure white; the Lottie Eckford, lavender blue with white wings, and there is nothing prettier than the Blanche Ferry with pink centre and white wings.

First let us consider our seed. Always have the best in quality, even if you

lack in quantity. To buy seed that has only cheapness for recommendation is not economy. At the Agricultural College the grain that is used on the experimental plots is all hand-picked, and only the largest and best seeds are sown. This may seem foolish to some people, but the results prove the value of good seed, and if we would be successful we must be particular about the details of our work.

Next the location. Do not plant on the south side of a high board fence or wall, for during the months of July and August, the hot sun being reflected from the wall will burn the tender vines. Sweet peas require plenty of ventilation and sunshine, but not a position where they will be scorched.

Many methods of growing them have been advocated. A number of years ago in the middle and southern states, they went very deeply into the trenching system. A trench three or four feet deep was dug, then filled with alternate layers of manure and rich soil. In a short time a cry went up all over the country from the seed-men that a blight had struck the sweet peas. At last one expert called attention to the fact that it was caused by the method of cultivation, that the plants were so weakened by their forced growth that they were liable to disease and did not have the vitality to withstand it. But on account of the cooler climate the growers in Canada suffered only slightly.

The following is the best method that has been found for the amateur grower of sweet peas. Dig a trench eighteen inches wide and eighteen inches deep, fill in the bottom with broken stone and a layer of fresh charcoal. Then put in a layer of barnyard manure and a layer of earth, mix it until it all looks like earth and tramp it in hard. If you cannot get this, good leaf loam will do as well, as this contains the ingredients that are necessary for good plant growth. Fill in the trench to within about three inches of the top, making it firm, because the roots require a hard soil, not a flinty one. Sow as early in the spring as possible; do not wait for fair weather; some seasons they may be sown as early as March, It is better to have two short rows than one long row, as better bloom and stronger seed will be the result. Make the seed-row about three inches deep and sow an ounce to every fifteen feet. Afterwards, if quality instead of quantity of bloom is required, thin them out to three inches apart.

During the first four or five weeks of their growth do not give any water, as there will be sufficient moisture in the soil, and the tiny plants are becoming strong and forming hardy roots by being obliged to force their way down into the firm soil. After the plants show a good, vigorous growth, supply water with a lavish hand, but not to have the ground soggy. Great care should be taken to keep the earth fine and mellow around the plants, as this prevents the rapid evaporation of the moisture and allows the air to get around the roots.

It is well to give support to the vines early. The best means of doing this is to put limbs or brush beside the plants. These may be rather unsightly at first, but, as soon as they are covered over with bloom, they are not noticed ' is to be preferred to wire netting, as the latter becoming hot during the day scorches the tender leaves and tendrils of the vines, causing them to burn brown.

With regard to the question of preserving your own seed from year to year, it is well by some means to set aside one or more plants from which to save the seed. This should be gathered from the first bloom of these plants; if it is gathered at the end of the season from the last blooms it will be very inferior seed and will produce plants the next year of an inferior quality. It is not wise to save your own seed for longer than two or three years, but better to buy fresh seed from a good reliable Canadian seedsman.

OFFICERS OF DISTRICT INSTITUTES

1909-10

District.		Name.	P. O. Address.
Amherst Island	President	Mrs. R. D. McDonald	Emerald.
	Vice-President	Mrs. D. Caughey	Stella.
	Secretary-Treasurer.	Mrs. S. K. Tugwell	Stella.
Brant, North	President	Mrs. Walter Patten	St. George.
	Vice-President	Mrs. Wm. Ker	St. George.
	Secretary-Treasurer.	Miss Edith I. Burt	St. George.
Brant, South	President	Mrs. Jas. Eadie	Oakland.
	Vice-President	Mrs. J. E. Brethour	Burford.
	Secretary-Treasurer.	Miss E. A. Lester	Burford.
Bruce, Centre	President	Mrs. I. Shoemaker	Paisley.
	Vice-President	Miss Anna McCaskill	Box 29, Kincardine.
	Secretary-Treasurer.	Mrs. R. J. Graham	Ripley.
Bruce, North	President		
	Vice-President		
	Secretary-Treasurer.	Mrs. W. B. Moore	Lion's Head.
Bruce, South	President	Miss Margaret McKague	Teeswater.
	Vice-President	Miss B. K. Rowand	Walkerton.
	Secretary-Treasurer.	Miss Ethel McConnell	Walkerton.
Bruce, West	Hon. President	Mrs. D. McTavish	Port Elgin.
	President	Mrs. D. D. Wark	Tara.
	Vice-President	Mrs. A. Aiken	Allanford.
	Secretary-Treasurer.	Mrs. James Cameron	Port Elgin.
Carleton	President	Mrs. J. E. Caldwell	City View.
	Vice-President	Mrs. R. H. Grant	Hazeldean.
	Secretary-Treasurer.	Mrs. G. R. Bradley	Carsonby.
Dufferin	President	Mrs. H. Endacott	Orangeville.
	Vice-President	Mrs. R. Fyfe	Shelburne.
	Secretary-Treasurer.	Miss Jennie Hall	Shelburne.
	Asst. Sec.-Treas.	Miss Lizzie Besley	Shelburne.
Dundas	President	Mrs. Catherine Strader	Iroquois.
	Vice-President	Mrs. L. M. Durant	Inkerman.
	Secretary-Treasurer.	Mrs. W. A. Brown	Chesterville.
Durham, East	President	Mrs. Frank Irwin	Perrytown.
	Vice-President	Mrs. John Greer	Bailieboro.
	Secretary-Treasurer.	Mrs. J. R. Eakins	Millbrook.
Durham, West	President	Mrs. C. N. Ruse	Hampton.
	Vice-President	Mrs. S. Shortridge	Solina.
	Secretary-Treasurer.	Miss E. E. Haycraft	Bowmanville.
Elgin, East	President	Mrs. D. D. Finch	Mapleton.
	Vice-President	Mrs. G. Winder	Lyons.
	Secretary-Treasurer.	Mrs. Mahlon Turrill	Aylmer.
Elgin, West	President	Mrs. B. B. Graham	Rodney.
	Vice-President	Mrs. D. Graham	Dutton.
	Secretary-Treasurer.	Miss M. C. Gow	Wallacetown.
Essex, North	President	Mrs. Edwin Plant	Woodslee.
	Vice-President	Mrs. Richard Mooney	Maidstone.
	Secretary-Treasurer.	Miss Ada B. Wilson	Essex.
Essex, South	President	Mrs. Hubert Wigle	Kingsville,
	Vice-President	Mrs. J. F. McCreery	Essex.
	Secretary-Treasurer.	Mrs. W. H. Sweetman	Elford.
Grenville, South	President	Mrs. (Rev.) Pinel	Maynard.
	Vice-President	Mrs. H. Throop	Charleville.
	Secretary-Treasurer.	Miss Elma Ball	Maynard.
Grey, Centre	President	Mrs. Robt. Best	Flesherton.
	Vice-President	Mrs. J. B. Egan	Dundalk.
	Secretary-Treasurer.	Mrs. A. E. Myles	Kimberley.

District.		Name.	P. O. Address.
Grey, North	Hon. President	Mrs. James Gardner	Kemble.
	President	Mrs. Wm. Wardell	Kilsyth.
	Vice-President	Mrs. W. J. Logan	Meaford.
	Secretary-Treasurer.	Mrs. B. J. Long	Meaford.
Grey, South	President	Mrs. R. Pettigrew	Varney.
	Vice-President	Mrs. J. Schnell	Ayton.
	Secretary-Treasurer.	Mrs. Thos. McGirr	Durham.
Haldimand	President	Mrs. R. E. King	DeCewsville.
	Vice-President	Mrs. Dr. Forbes	Caledonia.
	Secretary-Treasurer.	Mrs. W. M. Thompson	Canfield.
Halton	President	Mrs. C. H. Emerson	Burlington.
	Vice-President	Mr. W. C. Inglehart	Palermo.
	Secretary-Treasurer.	Mrs. Geo. Havill	Acton.
Hastings, East	President	Mrs. A. Loucks	Foxboro.
	Vice-President	Mrs. J. D. Collup	Belleville.
	Secretary-Treasurer.	Mrs. Currie English	Melrose.
Hastings, North	President	Mrs. John Snair	Wellman's Corners.
	Vice-President	Mrs. Henry Haryett	Fort Stewart.
	Secretary-Treasurer.	Mrs. R. S. Allen	Queensboro.
Hastings, West	President	Mrs. D. I. Rose	Frankford.
	Vice-President	Mrs. J. Philips	Wallbridge.
	Secretary-Treasurer.	Mrs. S. E. Lane	Wallbridge.
Huron, East	President	Mrs. Wm. Goggins	Fordwich.
	Vice-President	Mrs. S. S. Cole	Ethel.
	Secretary-Treasurer.	Mrs. J. Armstrong	Gorrie.
Huron, South	President	Miss G. Connor	Exeter.
	Vice-President	Miss R. Snowden	Bayfield.
	Secretary-Treasurer.	Mrs. A. Hastings	Exeter.
Huron, West	President	Mrs. Will Jenkins	Holmesville.
	Vice-President	Mrs. M. Swanson	Goderich.
	Secretary-Treasurer.	Mrs. F. W. Watts	Clinton.
Kent, East	President	Mrs. Wm. Smale	Highgate.
	Vice-President	Mrs. J. W. Gosnell	Highgate.
	Secretary-Treasurer.	Mrs. T. H. Tape	Highgate.
Kent, West	President	Mrs. Ed. LaMarche	Wheatley.
	Vice-President	Mrs. Thos. Irwin	Chatham.
	Secretary-Treasurer.	Mrs. Dexter Crew	Port Alma.
Lambton, East	President	Miss F. B. Rawlings	Forest.
	Vice-President	Mrs. A. D. Adams	Shetland.
	Secretary-Treasurer.	Miss Sarah Pettypiece	Forest.
Lambton, West	President	Mrs. Robt. Young	Waubuno.
	Vice-President	Mrs. Wm. Tucker	Brigden.
	Secretary-Treasurer.	Mrs. W. G. McBean	Waubuno.
Lanark, North	President	Mrs. W. C. Caldwell	Lanark.
	Vice-President	Mrs. Nelson Affleck	Lanark.
	Secretary-Treasurer.	Mrs. Dr. Charbonneau	Lanark.
Lanark, South	President	Mrs. Adam McLean	Perth.
	Vice-President	Mrs. J. F. Imeson	Perth.
	Secretary-Treasurer.	Miss Mary McNie	Perth.
Lennox	President	Mrs. (Dr.) Dorland	Dorland.
	Vice-President	Mrs. W. D. Roblin	Adolphustown.
	Secretary-Treasurer.	Miss Lilien Carr	Dorland.
Lincoln	President	Mrs. W. S. Duncan	Jordan Harbour.
	Vice-President	Mrs. W. Tufford	Beamsville.
	Secretary-Treasurer.	Mrs. E. W. Fry	Vineland.
Middlesex, East	President	Mrs. R. Barr	Harrietsville.
	Vice-President	Mrs. Geo. B. Laidlaw	Wilton Grove.
	Secretary-Treasurer.	Miss G. E. Thomson	Thorndale.
Middlesex, North	President	Mrs. P. L. Graham	Lobo.
	Vice-President	Mrs. (Dr.) Wilson	Parkhill.
	Secretary-Treasurer.	Miss Beulah A. Muma	Coldstream.

District.		Name.	P. O. Address.
Middlesex, West	President	Mrs. James Bogue	Strathroy.
	Vice-President	Mrs. W. B. Lindsay	Strathroy.
	Secretary-Treasurer.	Mrs. M. W. Cummiford	Strathroy.
Monck	President	Mrs. S. Woodland	Smithville.
	Vice-President	Mrs. S. McCleneghan	Perry Station.
	Secretary-Treasurer.	Mrs. R. B. Fitzgerald	Fenwick.
Muskoka, Centre	President	Mrs. McKnight	Utterson.
	Vice-President	Miss McKnee	Falkenburgh.
	Secretary-Treasurer.	Mrs. John Newson	Parkersville.
Muskoka, North	President	Mrs. Mary Hall	Ashworth.
	Vice-President	Mrs. Wes. Clarke	Aspdin.
	Secretary-Treasurer.	Mrs. Wm. DeMaine	Ashworth.
Muskoka, South	President	Mrs. Wm. Barron	Bracebridge.
	Vice-President		
	Secretary-Treasurer.	Mrs. H. Corrigan	Bracebridge.
Norfolk, North	President	Mrs. A. R. Decon	Simcoe.
	Vice-President	Mrs. Fred. Woolley	Simcoe.
	Secretary-Treasurer.	Mrs. Charles Barber	Simcoe.
Northumberland, E.	President	Mrs. W. W. Farley	Smithfield.
	Vice-President	Mrs. Jos. Philp	Penryn.
	Secretary-Treasurer.	Mrs. H. J. Scripture	Brighton.
Northumberland, W.	President	Mrs. F. Nichol	Roseneath.
	Vice-President	Miss Maude Holdsworth	Port Hope.
	Secretary-Treasurer.	Mrs. J. J. Hinman	Cobourg.
Ontario, North	President	Mrs. Thos. Feasby	Uxbridge.
	Vice-President	Mrs. Geo. Feasby	Uxbridge.
	Secretary-Treasurer.	Mrs. Wm. H. Thompson	Uxbridge.
Ontario, South	President	Mrs. S. L. Brown	Whitby.
	Vice-President	Mrs. Cronk	Pickering.
	Secretary-Treasurer.	Mrs. Wm. Balmer	Whitby.
Oxford, North	President	Miss B. Gilholm	Bright.
	Vice-President	Mrs. A. S. McKay	Woodstock.
	Secretary-Treasurer.	Mrs. Matthew Cowper	Thamesford.
Oxford, South	President	Mrs. Jas. Wood	Springford.
	Vice-President	Mrs. A. E. Cornwell	Norwich.
	Secretary-Treasurer.	Miss Lee McCrae	Tillsonburg.
Peel	President	Mrs. E. G. Graham	Brampton.
	Vice-President	Mrs. James Graham	Inglewood.
	Secretary-Treasurer.	Miss Susie Campbell	Brampton.
Perth, North	President	Mrs. A. D. Alexander	Milverton.
	Vice-President		
	Secretary-Treasurer.	Miss B. Grosch, Box 75	Milverton.
Perth, South	President	Mrs. V. Stock	Tavistock.
	Vice-President	Mrs. (Dr.) Proudfoot	Fullarton.
	Secretary-Treasurer.	Miss M. Pringle	Staffa.
Peterborough, East	President	Mrs. D. Miller	Warsaw.
	Vice-President	Mrs. P. W. Currie	Warsaw.
	Secretary-Treasurer.	Mrs. Geo. Clements	Warsaw.
Peterborough, West	President	Mrs. A. Higgins	Lakefield.
	Vice-President	Mrs. J. Reed	Lakefield.
	Secretary-Treasurer.	Mrs. W. H. Stabler	Lakefield.
Prince Edward	President	Mrs. Jonathan Talcott	Bloomfield.
	Vice-President	Mrs. W. P. Niles	Wellington.
	Secretary-Treasurer.	Mrs. C. S. McGillivray	Picton.
Renfrew, North	President	Mrs. Alex. Fraser	Westmeath.
	Vice-President	Mrs. Delorina Brown	Forester's Falls.
	Secretary-Treasurer.	Mrs. John A. Bennie	Beachburg.
Russell	President	Mrs. N. Ross	Russell.
	Vice-President	Mrs. D. S. Macdougall	Russell.
	Secretary-Treasurer.	Mrs. A. M. Richards	Russell.
Simcoe, Centre	President	Mrs. J. H. Hall	Phelpston.
	Vice-President	Mrs. R. Briggs	New Flos.
	Secretary-Treasurer.	Mrs. W. H. Sparling	Elmvale.

District.		Name.	P. O. Address.
Simcoe, East	President	Mrs. Wm. Bacon	Orillia.
	Vice-President	Mrs. D. M. Harvie	Orillia.
	Secretary-Treasurer.	Mrs. J. P. Wells	Orillia.
Simcoe, South	President	Mrs. T. B. Bateman	Fennells.
	Vice-President	Mrs. John Todd	Lefroy.
	Secretary-Treasurer.	Mrs. R. Boyes	Churchill.
Simcoe, West	President	Mrs. Kitchen	New Lowell.
	Vice-President	Mrs. F. E. Webster	Creemore.
	Secretary-Treasurer.	Miss Amelia Ovens	Duntroon.
Union	President	Mrs. M. Millar	Clifford.
	Vice-President	Mrs. John Otterbine	Drew Station.
	Secretary-Treasurer.	Mrs. John R. Scott	Clifford.
Victoria, East	President	Mrs. Wm. Fell	Bury's Green.
	Vice-President	Mrs. John Hodgson	Burnt River.
	Secretary-Treasurer.	Miss Emily L. Nie	Fenelon Falls.
Victoria, West	President	Mrs. F. Webster	Cambray.
	Vice-President	Mrs. J. P. McElroy	Linden Valley.
	Secretary-Treasurer.	Mrs. J. T. Birchard	Linden Valley.
Waterloo, North	President	Mrs. And. Brown, Sen.	Winterbourne.
	Vice-President	Mrs. Geo. F. Lackner	Hawkesville.
	Secretary-Treasurer.	Miss L. Bellinger	Wellesley.
Waterloo, South	President	Miss E. D. Watson	Ayr.
	Vice-President	Mrs. R. H. Knowles	Hespeler.
	Secretary-Treasurer.	Mrs. Will Elliott	Galt.
Welland	President	Mrs. W. E. Phin	Welland.
	Vice-President	Mrs. John Kottmeire	Welland.
	Secretary-Treasurer.	Miss Maude R. Baker	Ridgeway.
Wellington, Centre	President	Miss Ada Currie	Ospringe.
	Vice-President	Miss M. F. Hall	Ariss.
	Secretary-Treasurer.	Mrs. Jas. McLachlan	Erin.
Wellington, East	President	Mrs. H. Quinlan	Damascus.
	Vice-President	Mrs. Wilkins	Arthur.
	Secretary-Treasurer.	Miss Gertrude King	Mount Forest.
Wellington, South	President	Mrs. John Kirby	Marden.
	Vice-President	Mrs. D. Talbot	Everton.
	Secretary-Treasurer.	Miss Eliza Friendship	Guelph.
Wellington, West	President	Mrs. Wm. Brimblecombe	Drayton.
	Vice-President	Mrs. Wm. Reid	Palmerston.
	Secretary-Treasurer.	Miss Gussie Noecker	Drayton.
Wentworth, North	President		
	Vice-President		
	Secretary-Treasurer.	Mrs. J. E. McDonough	Westover.
Wentworth, South	President	Mrs. R. S. Stevenson	Ancaster.
	Vice-President	Mrs. Herbert Lutz, 115 Steven St.,	Hamilton.
	Secretary-Treasurer.	Miss Clara Walker	Stony Creek.
York, East	President	Mrs. A. S. Clarry	Locust Hill.
	Vice-President	Mrs. R. N. Fairles	Bloomington.
	Secretary-Treasurer.	Miss Lulu Reynolds	754 Gerrard St. E., Toronto.
York, North	President	Mrs. C. F. Doane	Newmarket.
	Vice-President	Mrs. Geo. Atkinson	Strange.
	Secretary-Treasurer.	Mrs. C. E. Lundy	Newmarket.
York, West	President	Mrs. W. J. Farrand	Woodbridge.
	Vice-President	Mrs. W. W. Howell	104 Louisa St., West Toronto.
	Secretary-Treasurer.	Miss Agnes Sosnowsky	Weston.

Districts organized without separate district officers:—Haliburton, Leeds, Peterboro' North.

NORTHERN WOMEN'S INSTITUTES.

District.		Name.	P. O. Address.
Algoma, Centre:			
Goulais Bay	President	Mrs. F. McKaughan	Goulais Bay.
	Vice-President	Mrs. M. McLean	Goulais Bay.
	Secretary-Treasurer.	Mrs. G. Robertson	Goulais River.
Tarentorus	President	Mrs. T. C. Dinsmore, Box 366,	Sault Ste. Marie
	Vice-President	Mrs. Chas. Nixon	Sault Ste. Marie.
	Secretary-Treasurer.	Mrs. A. H. Huckson, Box 182,	Sault Ste. Marie
Algoma, North Shore	President	Mrs. Jas. Junior	MacLennan.
	Vice-President	Mrs. W. A. Shier	MacLennan.
	Secretary-Treasurer.	Mrs. H. A. Robinson	MacLennan.
Kenora	President	Mrs. Nellie Lucas	Eagle River.
	Vice-President	Mrs. Jas. Reid	Oxdrift.
	Secretary-Treasurer.	Mrs. A. L. Orvis	Dryden.
Manitoulin, East	President	Mrs. E. Mackie	Little Current.
	Vice-President	Mrs. J. C. McGauley	South Bay Mouth.
	Secretary-Treasurer.	Mrs. A. Trowbridge	Big Lake.
Manitoulin, West	President	Mrs. G. Moscrop	Poplar.
	Vice-President	Mrs. A. McDonald	Perivale.
	Secretary-Treasurer.	Mrs. Geo. Priddle	Silver Water.
Rainy River	President	Mrs. Alex. Corless	Emo.
	Vice-President	Mrs. W. H. Weir	Stratton.
	Secretary-Treasurer.	Miss Jessie A. Stuart	Emo.
St. Joseph Island	President	Mrs. G. S. Lay	Richard's Landing.
	Vice-President	Mrs. C. Cooper	Harmony.
	Secretary-Treasurer.	Miss A. Moore	Richard's Landing.
Temiscamingue	President	Mrs. C. C. Farr	Haileybury.
	Vice-President	Mrs. J. T. Welbourne	Uno Park.
	Secretary-Treasurer.	Mrs. Walter Kirstine	Haileybury.
Thunder Bay	President	Mrs. H. T. Bryan	Dorion.
	Vice-President	Mrs. A. Boulter	Murillo.
	Secretary-Treasurer.	Mrs. Dr. Garver	Slate River.

Districts without separate district officers:—Parry Sound East.

OFFICERS OF BRANCH INSTITUTES.

Institutes.	President.	Secretary.
Amherst Island—		
Stella	Mrs. R. D. McDonald, Emerald	Mrs. S. K. Tugwell.
Brant, North—		
Glen Morris	Mrs. Richard Weir	Miss M. Murray.
Moyle & Tranquility	Miss M. E. Good, Brantford	Mrs. John McVicar, Paris.
Onondaga	Mrs. M. N. Simpson	Mrs. A. W. VanSickle.
Paris	Miss Bessie Telfer	Mrs. M. Deans.
St. George	Mrs. Walter Patten	Miss Edith I. Burt.
Brant, South—		
Burford	Miss M. T. Stewart, Mt. Vernon	Miss M. Metcalfe.
Cathcart	Mrs. G. VanHorne, Burford	Miss E. F. Read.
Hatchley	Mrs. Geo. Morris	Mrs. C. Haight, New Durham.
Mohawk	Mrs. Wm. McEwen	Miss B. Roelofson, Brantford.
Ohsweken	Mrs. Robt. Martin	Mrs. Enos Hill.
Bruce, Centre—		
Bervie	Mrs. E. A. Emerson	Miss Madge McKinny.
Kincardine	Mrs. S. Farrel	Miss M. McCosh.
Paisley	Miss McBeath	Miss A. McBride.
Ripley	Mrs. R. J. Graham	Mrs. W. J. Crawford.
Williscroft	Mrs. Jas. Rushton	Miss Lizzie Robb.
Bruce, North—		
Hepworth	Mrs. John Robinson	Mrs. E. N. Armstrong.
Lion's Head	Mrs. Wm. Laidlaw	Mrs. H. Miers.
Wiarton	Mrs. Geo. Steacy	Mrs. W. B. Reeve, Oxenden.
Bruce, South—		
Lucknow	Mrs. Wm. McDonald	Miss Fern Reid.
Mildmay	Mrs. H. Pletsch	Mrs. John Coates.
Teeswater	Mrs. Dr. Stewart	Miss Kate Clark.
Walkerton	Miss Bessie Rowand	Miss E. M. McConnell.
Bruce, West—		
Allanford	Mrs. A. Aiken	Mrs. T. Dornan.
Arkwright	Mrs. (Rev.) Oltiwell	Miss A. Corbett.
Port Elgin	Mrs. D. McTavish	Mrs. J. S. Cameron.
Tara	Mrs. F. A. Thomas	Miss Jessie Mitchell.
Carleton—		
Manotick	Mrs. Robt. Gamble	Mrs. G. R. Bradley, Carsonby.
North Gower	Mrs. R. A. Craig	Mrs. A. W. Callander.
Stittsville	Mrs. R. H. Grant, Hazeldean	Mrs. Ab. Fleming.
Dufferin—		
Blount	Mrs. Dodds	Miss Ella M. Henry.
Bowling Green	Mrs. H. Whaley	Miss Ethel Walker.
Camilla	Mrs. Ledlow	Miss B. Thompson.
Corbetton	Mrs. J. Blakely	Mrs. J. Speer.
Honeywood	Mrs. G. A. East	Miss Lillian Mortimer.
Horning's Mills	Miss F. Ferris	Mrs. J. T. Webster.
Keldon	Mrs. E. Kelsey	Miss M. T. Mulhall.
Laurel	Mrs. T. R. White	Mrs. E. Richardson.
Orangeville	Mrs Ketchum Clark	Mrs. D. McPherson.
Shelburne	Miss Lizzie Besley	Miss A. Besley.
Whittington	Mrs. L. Groskurth	Mrs. W. T. Johnston.
Dundas—		
Brinston's Corners	Mrs. A. D. Harkness, Irena	Miss Dora E. Driscoll, Brinston.
Chesterville	Mrs. Ingram Smith	Mrs. W. A. Brown.
Inkerman	Mrs. John W. Suffel	Mrs. L. M. Durant.
Morrisburg	Mrs. R. H. Ashton	Mrs. H. H. Bradfield.
Durham, East—		
Bailieboro	Mrs. G. Skitch	Mrs. J. Greer.
Charlecote	Mrs. M. G. Welsh	Mrs. Blake Symons, Welcome.
Fairmount (Springville)	Mrs. John McIntosh, Springville	Mrs. J. F. Staples, Ida.
Garden Hill (Hope)	Mrs. F. Irwin, Perrytown	Mrs. Geo. Caldwell, Perrytown.
Millbrook	Mrs. D. Milligan	Miss M. E. Fitzgerald.
Mount Pleasant	Miss L. M. Hayes	Mrs. H. J. McLean.
Durham West—		
Bowmanville	Mrs. E. Bellman	Miss E. E. Haycraft.
Hampton	Mrs. A. Peters	Mrs. C. J. Kerslake.
Nestleton	Mrs. Edwin Veale	Miss E. L. Malcolm.
Orono	Miss R. A. Walsh	Miss K. Colville.

Durham West—Continued.			
Solina	Mrs. S. Shortridge	Miss	Effie V. Taylor.
Starkville	Mrs. J. J. Reid	Miss	E. S. Cowan.
Elgin, East—			
Aylmer	Mrs. John Trim	Miss	Ethel Hare.
Bayham	Mrs. Riddell	Mrs.	Harry Godwin.
Copenhagen	Mrs. S. Prouse	Miss	Grace Jones.
Luton	Mrs. Ross McConnell	Mrs.	W. J. Dunn.
Lyons	Mrs. Wm. Boyce	Miss	Agnes Mitchell.
Mapleton & Kingsmill	Mrs. D. O. White, Mapleton	Mrs.	John Brodie, Mapleton.
Pt. Burwell	Mrs. J. McConnell	Miss	B. Markle.
Springfield	Mrs. F. C. Muller	Mrs.	I. Pritchard.
Elgin, West—			
Dutton	Mrs. Price	Miss	B. Kirkland.
Iona	Mrs. D. Brown	Miss	T. McAlpine.
Rodney	Miss M. Gillies, Aldboro	Mrs.	G. A. McLevey.
Essex, North—			
Comber	Mrs. T. W. Taylor	Mrs.	Ida M. Mitchell.
Maidstone	Mrs. Robt. Greenway, Essex	Miss	M. Hammond, Essex.
Maidstone S.S. No. 11	Mrs. Wm. Boggs, Essex	Miss	Bella Loucks, Essex.
Oldcastle	Miss Mary Wolfe	Mrs.	Frank Jessop, Windsor.
Woodslee	Miss Jessie Christie, Essex	Mrs.	Thos. Plant, Woodslee.
Essex, South—			
Amherstburg	Mrs. Robt. Dorsey	Mrs.	Chas. Atkinson.
Essex	Mrs. J. F. McCreery	Miss	Cora Wigle.
Gosfield, North	Mrs. J. C. Stotts	Mrs.	W. H. Neville, Cottam.
Harrow	Mrs. J. Forsythe	Mrs.	T. B. Adams.
Kingsville	Mrs. Lewis Malott	Mrs.	Wm. Holdaway.
Leamington	Mrs. J. L. Hilborn	Mrs.	J. M. Gibb.
Olinda	Mrs. M. G. Bruner	Mrs.	Geo. Orton.
Grenville, South—			
Brouseville	Mrs. J. S. Riddell, Pittston	Mrs.	Chas. J. Smith, Cardinal.
Maynard	Mrs. (Rev.) Pinel	Miss	Elma Ball.
Grey, Centre—			
Badjeros	Mrs. W. Crosby	Mrs.	J. C. Finley.
Dundalk	Mrs. T. H. Reid	Mrs.	J. B. Egan.
Maxwell	Mrs. Jos. Gamey	Mrs.	John Ross.
Flesherton	Mrs. Robt. Best	Mrs.	W. H. Thurston.
Heathcote	Mrs. H. Conn	Miss	Sara Clark.
Hopeville	Mrs. Ed. Hockridge	Miss	E. Pallister.
Kimberley	Mrs. W. T. Ellis	Miss	Kinross Boyle.
Priceville	Mrs. D. Stewart	Miss	M. McLeod.
Ravenna	Mrs. W. Buchanan	Miss	Eva Buchanan.
Temple Hill	Mrs. P. Sparling, Goring	Miss	M. E. Smith, Harkaway.
Vandeleur	Mrs. J. I. Graham	Mrs.	Geo. Warling.
Walter's Falls	Mrs. John Sutherland	Miss	Rhoda Breadner.
Williamsford	Mrs. Wm. McMitchell	Mrs.	L. Becker.
Grey, North—			
Annan	Mrs. A. M. Taylor	Miss	Nellie J. Cannon.
Brookholm	Mrs. Walter Burnstead	Mrs.	Frank Mitchell.
Chatsworth	Mrs. H. Norton	Mrs.	T. H. Collins.
Clavering	Mrs. W. Wilkinson	Miss	Eva Hambley.
Desboro	Mrs. Robert Riddell	Miss	Lizzie Hanbury.
Kemble	Mrs. John Jones	Mrs.	James Gardner.
Kilsyth	Mrs. Alex. Donald	Mrs.	Wm. Wardell.
St. Vincent	Mrs. B. J. Long, Meaford	Mrs.	Wm. A. Johnston, Meaford.
Grey, South—			
Ayton	Mrs. (Dr.) Easton	Mrs.	R. H. Fortune.
Dromore	Miss A. Renwick	Miss	E. B. Renton.
Durham	Mrs. T. McAnulty	Miss	M. McCrie.
Elmwood	Miss M. J. Hastie	Miss	M. E. Fischer, Crawford.
Fairbairn	Mrs. Irwin Robb, Robb	Mrs.	D. Gillies, Robb.
Hanover	Mrs. J. E. Knechtel	Mrs.	Wm. Bartleman.
Holstein	Mrs. W. H. Rogers	Miss	Della Reid.
Haldimand—			
Caledonia	Mrs. Wallis	Miss	Gladys Hudspeth.
Canfield	Mrs. R. V. Mills	Miss	Ida Hedley.
Cayuga, South	Mrs. J. C. Fluhrer	Miss	Barbara Albright.
Cheapside	Mrs. (Dr.) Sherk	Miss	C. Stilwell.
Clanbrassil	Mrs. Peart	Mrs.	Jas. McConachie.

Haldimand—Continued.		
Decewsville	Mrs. J. Campbell, Nelles Corners.	Mrs. Omar Warner.
Fisherville	Mrs. G. A. Nablo	Miss T. Last.
Gill	Mrs. H. H. Gee, Nelles Corners.	Mrs. Albert Snell, Hagersville.
Hagersville	Mrs. R. Robertson	Mrs. R. Hambleton.
Jarvis	Mrs. J. J. Parson	Miss E. L. McCarter.
Nanticoke	Mrs. W. H. Evans	Mrs. W. Sellars.
Rainham Centre	Mrs. L. F. Culver	Mrs. R. F. Miller.
Sundusk	Miss Florence Evans	Miss Maud Westerby.
Selkirk	Mrs. Ryan	Mrs. A. C. Jackson.
Springvale	Mrs. J. Winger	Miss L. Winger.
York	Mrs. A. Bain	Miss J. Renshaw.
Cayuga	Mrs. Fissette	Mrs. R. H. Green.
Haliburton—		
Gooderham		Miss B. Hunter.
Haliburton	Mrs. G. Potts	Mrs. Wm. Curry.
Irondale	Mrs. A. Graham	Mrs. P. A. Barr.
Minden	Mrs. Wm. Fielding	Mrs. S. Phillips.
Halton—		
Acton	Mrs. H. P. Moore	Miss Ada Holmes.
Ballinafad	Miss Annie Shortill	Mrs. G. C. Campbell.
Burlington	Mrs. C. H. Emerson	Mrs. E. J. Moore.
Georgetown	Mrs. Allen Devereaux	Miss M. Black.
Hornby	Mrs. Wm. H. Bailey	Miss Maymie Lindsay.
Kilbride	Mrs. John Small	Miss B. McArthur.
Moffatt	Mrs. Levi Elsley	Miss Lila Dredge.
Nelson	Miss Maggie Alton	Miss C. Mitchell.
Norval	Mrs. John Robinson	Miss Annie Noble.
Palermo	Mrs. Paul Campbell, Merton	Miss Emily Hager.
Sheridan	Mrs. Geo. Hardy	Miss E. Savage.
Trafalgar	Mrs. R. Gorman	Mrs. W. T. Brown.
Hastings, East—		
Foxboro	Mrs. A. Loucks	Miss L. Ashley.
Melrose	Mrs. E. Simpkins	Miss Alice Long, Blessington.
Quinte	Mrs. Jas. Garbutt, Belleville	Miss Mary Clazie, Shannonville.
Roslin	Mrs. J. M. Chisholm	Mrs. J. W. Kingston.
Tweed	Mrs. Chas. Bartlam	Mrs. J. Arbuckle.
Hastings, North—		
Eldorado	Mrs. Geo. Empey, Empey	Mrs. L. Hulin.
Fort Stewart	Mrs. Albert McPherson	Mrs. E. T. Lumb.
Hermon	Mrs. Fred. Adams	Miss Jessie Rankin.
L'Amable	Mrs. W. R. Power	Miss M. H. Lumb.
Queensboro	Mrs. F. J. Thompson	Miss Maggie I. Nicol.
Springbrook	Mrs. J. Bateman	Mrs. Wm. Webb, Bellview.
Wellman's Corners	Mrs. Thos. Hubble	Mrs. John Snarr.
Hastings, West—		
Wallbridge	Mrs. D. I. Rose, Frankford	Mrs. S. E. Lane.
Huron, South—		
Bayfield	Miss R. Snowden	Miss Maggie E. Campbell.
Exeter	Miss G. Connor	Mrs. A. Hastings.
Huron, East—		
Bluevale	Mrs. J. C. Johnston	Mrs. W. J. West.
Ethel	Mrs. C. Bernath	Miss L. Hall.
Fordwich	Mrs. J. H. Wade	Mrs. E. Spinks.
Gorrie	Mrs. G. W. Knowlson	Mrs. J. Armstrong.
Jamestown	Mrs. J. D. Millar	Mrs. D. McDonald.
Molesworth	Mrs. J. Burnett	Miss J. Stewart.
Walton	Mrs. A. Gardiner	Miss Rose Simpson.
Huron, West—		
Clinton	Mrs. Frank Hall	Mrs. John Johnston.
Goderich	Mrs. Charles Reid	Miss M. E. Salkeld, Box 59.
Holmesville	Mrs. Lew Tebbutt	Miss Blanche C. Tebbutt.
Kintail	Mrs. R. D. McDonald	Miss Harriet Young.
Londesboro	Mrs. Peffers	Mrs. Jno. O. Lounsbery.
St. Helens	Miss M. Ramage	Miss M. C. Rutherford.
Wingham	Mrs. H. B. Elliott	Mrs. M. I. Gillespie.
Kent, East—		
Botany	Mrs. D. Winters, Thamesville	Mrs. Jas. Robertson, Harwick.
Croton	Mrs. J. H. Snary	Mrs. E. Young.
Kent Bridge	Mrs. John Hardy	Mrs. M. West.

Kent, East—Continued.

Highgate	Mrs. Wm. Smale	Mrs. T. H. Tape.
Morpeth	Mrs. A. Mitton	Mrs. H. Cornwall.
Thamesville	Mrs. R. Pye	Miss Annie Coutts.
Kent, West—		
Cedar Springs	Mrs. W. T. Mead	Mrs. Alex. McPherson.
Eberts	Mrs. Andrew Buist	Mrs. John Forsythe.
Irwin	Mrs. Frank Suitor	Mrs. Thomas Irwin, Chatham.
Port Alma	Mrs. Dexter Crew	Mrs. John R. Shanks.
Tilbury	Mrs. Henry Sales	Mrs. Duncan Robertson.
Valetta	Mrs. Kenneth Campbell	Miss Myrtle Reynolds.
Wheatley	Mrs. Joseph Hickson	Mrs. Byron Robinson.
Quinn	Mrs. Thos. Brown	Miss M. Richards.
Lambton, East—		
Alvinston	Mrs. L. Ross	Mrs. A. B. Connor.
Arkona	Mrs. W. Thomas	Miss Sadie McKenzie.
Camlachie	Mrs. D. F. Smith	Miss M. McLean.
Forest	Mrs. R. Macken	Mrs. H. W. Parsons.
Wyoming	Mrs. J. Forbes	Miss A. Steadman.
Inwood	Mrs. J. W. Courtright	Mrs. J. H. Marrison.
Warwick	Mrs. J. Humphries	Miss Alma McRorie.
Shetland	Mrs. A. D. Adams	Miss Ethel Pesha.
Thedford	Mrs. M. Willsie	Mrs. J. G. Dawes.
Lambton, West—		
Brigden	Mrs. Robt. Young Waubuno	Mrs. W. G. McBean, Waubuno.
Colinville	Mrs. Jas. Jarvis	Miss Mabel Cruikshank.
Oil Springs	Mrs. T. K. Thompson	Mrs. G. H. Thompson.
Osborne	Mrs. H. Kerr	Mrs. Robt. Sharpe, Bunyan.
Lanark, North—		
Almonte	Mrs. Andrew Cochrane	Miss A. J. Forgie.
Lanark	Mrs. W. C. Caldwell	Mrs. Dr. Charbonneau.
Lanark, South—		
Carleton Place	Mrs. Jos. Youill	Miss Lena McLean.
Perth	Mrs. Adam McLean	Miss Mary McNie.
Leeds—		
Lansdowne	Mrs. J. D. H. Darling	Miss Nora Donevan, Melcombe.
Newboro	Mrs. R. G. Leggatt	Miss H. M. Dargavell, Elgin.
Lennox—		
Adolphustown	Mrs. (Dr.) Dorland, Dorland	Miss Lilien Carr, Dorland.
Conway	Mrs. W. H. Allison	Mrs. C. C. Young, Sandhurst.
Lincoln—		
Beamsville	Mrs. J. D. Albright	Miss Nellie Rowe.
Campden (Union)	Mrs. John Haist, Pelham Union	Mrs. Wm. Honsburger, Jordan.
Grimsby	Mrs. H. A. Baldwin	Mrs. Geo. Vanduzer.
Queenston	Miss I. M. Armstrong	Miss Edna L. Lowrey.
Middlesex, East—		
Harrietsville	Mrs. A. E. Jackson	Mrs. C. B. Adams.
Thorndale	Mrs. Jas. Wheaton	Miss Jennie Carrothers.
Wilton Grove	Mrs. Walter Laidlaw	Mrs. W. H. Fleming.
Middlesex, North—		
Ailsa Craig	Mrs. W. Brownlee	Mrs. Wm. Bell.
Beechwood	Mrs. J. Currie, Fernhill	Mrs. R. E. Owen, Fernhill.
Coldstream	Mrs. J. O. Cutler, Poplar Hill	Miss Ethel Ward, Amiens.
Greenway	Mrs. C. H. Wilson	Miss Myrtle Wicket.
Lobo	Mrs. Peter McIntyre, Ferguson	Miss E. Graham.
Lucan	Mrs. John McTurk	Mrs. E. B. McTurk.
Mooresville	Mrs. Hiram Windsor	Miss E. Grundy, Clandeboys.
Sylvan	Miss Minnie McDonald	Mrs. M. Mackey.
Parkhill	Mrs. D. Dawson	Mrs. W. E. Clothier.
West McGillivray	Mrs. S. Amos, Brinsley	Miss Mae Sceli, Brinsley.
Middlesex, West—		
Appin	Mrs. E. A. Rosser	Mrs. Thos. King.
Napier	Mrs. Will Kilbride	Mrs. J. M. Brunt.
Strathroy	Mrs. Jas. Bogue	Mrs. M. W. Cummiford.
Monck—		
Canboro	Mrs. Chas. Schwalm	Miss Jennie Carey.
Pelham Centre	Mrs. Jas. Brewer, Ridgeville	Mrs. C. R. Fegan, Fenwick.
Smithville	Mrs. Gordon Moffit	Miss Mamie Couse.
Welland Port	Mrs. Jacob Stewart	Mrs. B. F. Sutherland.

Monck—Continued.			
Winger	Mrs. S. McCleneghan, Perry Stn.	Mrs. Ed. Mains.	
Silverdale		Mrs. Chas. Wills, Rosedene.	
Muskoka, Centre—			
Allensville	Miss Margaret Bullen	Miss M. Proudfoot.	
Parkersville	Mrs. McKnight, Utterson	Mrs. John Newson.	
Ufford	Mrs. Chas. Oldham	Mrs. Elijah Veitch.	
Muskoka, North—			
Ashworth	Mrs. A. E. DeMaine	Mrs. Wm. DeMaine.	
Aspdin	Mrs. H. Dixon	Mrs. Jos. Clarke.	
Muskoka, South—			
Bardsville	Mrs. Austin	Mrs. Herman Goltz.	
Baysville	Mrs. P. B. Bastedo	Miss T. Gammage.	
Sanford	Mrs. Wm. Killen, Port Carling	Miss Edith Edwards, Brackenrig.	
Germania	Mrs. John Thompson	Miss Julia Wise.	
South Macaulay	Mrs. T. B. Rosewarne, Bracebridge.	Mrs. Wm. Holliday, Box 331, Bracebridge.	
Muskoka Falls	Mrs. Laheny	Mrs. H. Speedie.	
Reay	Mrs. Donald Morrison	Mrs. J. T. Galbraith.	
Norfolk, North—			
Courtland	Miss L. Harris	Mrs. J. S. Benn.	
Delhi	Mrs. L. C. McConnell	Miss Lulu Kitchen.	
Guysboro	Mrs. Z. A. Leach	Miss J. A. Watson, Acacia.	
Simcoe	Mrs. A. R. Decon	Mrs. Charles Barber.	
Windham Centre	Mrs. Geo. Henry	Mrs. J. S. Merritt.	
Northumberland, East—			
Brighton	Mrs. Wm. Strong, Hilton	Mrs. G. Finley Clark.	
Castleton	Miss E. G. Pomeroy	Mrs. C. E. Nichols.	
Dundonald	Mrs. M. Dudley	Mrs. Joseph Philp, Penryn.	
Percy	Mrs. Geo. Carlaw, Warkworth	Mrs. Hiram Curtis, Norham.	
Wooler	Mrs. M. E. Maybee, Trenton	Miss Zella Ireland, Trenton.	
York Road	Mrs. Wm. Potts, Smithfield	Miss Etta Dempsey, Trenton.	
Codrington	Mrs. H. Orser	Miss Jennie Cole.	
Northumberland, West—			
Cobourg	Mrs. Jas. Barr	Mrs. R. C. Allan.	
Elmview	Miss M. Holdsworth, Port Hope.	Mrs. T. W. Philp.	
Fenella	Mrs. Henry Brisbin	Mrs. M. Davey.	
Grafton	Mrs. R. Morgan, Brookside	Miss Reta Winter, Wicklow.	
Roseneath	Mrs. F. Nichol	Mrs. B. Holstead.	
Ontario, North—			
Uxbridge	Mrs. Thomas Feasby	Mrs. Wm. H. Thompson, Box 143.	
Ontario, South—			
Claremont	Mrs. C. J. Brodie	Miss E. Evans.	
Columbus	Mrs. W. Richardson	Miss A. James.	
Kinsale	Mrs. R. R. Mowbray	Mrs. J. Seldon, Greenwood.	
Pickering	Mrs. F. M. Chapman	Mrs. Robt. Bedson.	
Whitby	Mrs. J. Fletcher	Miss F. Bateman.	
Whitevale	Mrs. M. M. Robinson	Mrs. W. S. Major.	
Oxford, North—			
Braemar	Mrs. A. S. McKay, Woodstock	Miss L. Sutherland.	
Bright		Miss B. Gilholm.	
Cassel	Miss Jean Currah	Mrs. S. Pearson.	
Drumbo	Mrs. M. F. Amslie	Miss Agnes Paxton.	
Embro	Mrs. J. E. McKay	Mrs. T. N. Underhill.	
Harrington	Mrs. H. Bossence	Miss Hattie Martin.	
Kintore	Mrs. W. Dunlop	Mrs. J. Teddery.	
Plattsville	Mrs. W. Randall	Miss M. Smart.	
Princeton	Mrs. Freeman	Miss J. MacArthur.	
Thamesford	Mrs. John Robinson	Mrs. Matthew Cowper.	
Oxford, South—			
Beachville	Mrs. Jas. Collier	Miss Bessie Leonard.	
Brownsville	Mrs. J. Corbett	Mrs. J. A. Esseltine.	
Burgessville	Mrs. E. Snyder	Mrs. James Dennis.	
Currie	Miss Agnes Rice	Miss Pearl Lammiman.	
Foldens	Mrs. J. C. Barrett	Miss Frances Poole.	
Mt. Elgin	Mrs. (Dr.) Smith	Mrs. Albert Bell.	
Norwich	Mrs. A. W. Lossing	Miss Sadie M. Cornwell.	
Springford	Mrs. Littlejohn	Mrs. S. Pratt.	
Tillsonburg	Mrs. Havelock Hockey	Mrs. W. D. Robertson	

Peel—		
Alton	Mrs. J. B. Smith	Mrs. A. C. Wilson.
Belfountain	Mrs. J. Willis	Miss L. Kirkwood, The Grange.
Bolton	Mrs. E. Armstrong, Castlederg	Miss L. Norton.
Brampton	Mrs. Matt. Carter	Miss Susie Campbell.
Caledon	Mrs. Dan. McKim	Miss P. Judge.
Cheltenham	Mrs. J. McQuarrie	Miss E. McKechnie.
Inglewood	Mrs. Jas. Graham	Miss A. Knox.
Malton	Mrs. E. Garbutt, Elmbank	Miss A. Brocklebank.
Mono Mills	Mrs. Wilson Duke	Miss Jennie Jackson.
Mono Road	Mrs. J. J. Evans, Caledon East	Miss M. Shields.
Streetsville	Mrs. E. O. Madill	Miss Eva Graydon.
Tullamore	Mrs. Wm. Morrison	Mrs. W. J. Simpson.
Perth, North—		
Hampstead	Mrs. Duncan Stewart	Miss Fleischhauer, Gadshill.
Listowel	Mrs. Tom Johnston	Miss Agnes Cleland.
Millbank	Mrs. W. Houston	Miss E. Crookshanks, Box 75.
Milverton	Mrs. A. D. Alexander	Miss B. Grosch.
Perth, South—		
Fullarton	Mrs. Hetherington	Miss J. Urquhart.
Kirkton	Mrs. S. Tufts	Miss Sarah E. Doupe.
Mitchell	Mrs. J. Hodge	Mrs. T. Vivian.
St. Mary's	Miss M. Graham	Miss M. Driver, Science Hill.
Sebringville	Mrs. B. F. Kastner	Miss M. E. Kastner.
Staffa	Miss M. Davis	Miss M. Pringle.
Tavistock	Mrs. J. Vance	Mrs. J. Brunner.
Peterboro, East—		
Keene	Mrs. T. Wedlock	Miss Mary S. Miller.
Warsaw	Mrs. D. Miller	Mrs. Geo. Clements.
Peterboro, North—		
Clydesdale	Mrs. Allan Caldwell	Mrs. Agens L. Hawkes, Chandos.
Mt. Julian	Miss Emma Reid	Miss Jessie M. Reid, Haultain.
Peterboro, West—		
Lakefield	Mrs. A. Higgins	Mrs. W. H. Stabler.
Prince Edward—		
Bloomfield	Mrs. Andrew Dorland	Mrs. H. J. Cooper.
Cherry Valley	Mrs. S. McCartney	Miss Vera Blakely.
Gilbert's Mills	Mrs. W. R. Munroe	Mrs. Albroe Cole.
Milford	Mrs. John Welbanks	Mrs. David J. Love.
Mountain View	Mrs. T. Barber, Rossmore	Miss L. Anderson.
Picton	Mrs. A. H. Hubbs	Mrs. S. C. McGillivray.
Rednersville	Mrs. Alex. Anderson	Mrs. Wm. Nethery.
Wellington	Mrs. J. E. Noxon	Mrs. T. S. Stinson.
West Lake	Mrs. J. W. Hyatt	Miss D. J. Hicks.
Renfrew, North—		
Beachburg	Mrs. H. Murray	Mrs. Jas. R. Davidson.
Bromley	Mrs. Jas. Patterson, Douglas	Mrs. Nathan Purdie.
Forester's Falls	Mrs. John Bennett	Mrs. P. R. Pounder.
Queen's Line	Mrs. I. Cowie, Forester's Falls	Miss L. Bennett, Forester's Falls.
Westmeath	Mrs. D. Bromley, Bromley Lane	Mrs. Wm. Keyes.
Russell—		
Russell	Mrs. N. Ross	Mrs. A. M. Richards.
Simcoe, Centre—		
Allenwood	Mrs. Jack McDermot	Mrs. Jack Northgraves.
Edenvale	Miss Margaret Gilchrist	Miss Annie Gilchrist.
Elmvale	Mrs. John Middleton	Miss Jean Graham, Saurin.
Minesing	Mrs. A. Foyston	Miss Stella Downey.
New Flos	Mrs. W. J. Train	Mrs. W. J. Galbraith.
Phelpston	Mrs. J. H. Hall	Miss Mae Shanahan.
Randolph	Mrs. A. E. Elsom	Miss Ethyl Todd.
Wyebridge	Mrs. T. M. Robins	Mrs. C. W. Copeland.
Simcoe, East—		
Orillia	Mrs. Wm. Bacon	Mrs. J. P. Wells.
Simcoe, South—		
Churchill	Mrs. T. B. Bateman, Fennells	Mrs. R. Boyes.
Jemas Mills	Mrs. W. S. Fraser, Brantford	Miss Ethel Sinclair, Bradford.
Newton Robinson	Mrs. Rowe	Mrs. J. R. Chantler.
Stroud	Mrs. R. Sutherland	Mrs. J. W. Black.

Simcoe, West—		
Avening	Mrs. Robt. Murray	Mrs. J. A. Carleton.
Batteau	Mrs. G. Conn	Miss M. Gordon.
Creemore	Mrs. A. M. Stacey	Mrs. Archer Watson.
Duntroon	Mrs. P. McDermid	Mrs. D. J. McGregor.
Everett	Mrs. H. Wilkinson	Mrs. Sallens.
New Lowell	Mrs. John Switzer	Mrs. W. E. Knowles.
Singhampton	Mrs. Wm. Tompkins	Mrs. J. F. Smith.
Sunnidale Corners	Mrs. P. Giffen	Miss E. Thompson.
Union—		
Clifford	Mrs. Peter Schaus	Mrs. Jno. R. Scott.
Drew	Mrs. S. E. Donaldson	Miss Sarah Moatz.
Harriston	Mrs. Geo. Ellsworth	Mrs. Burrows.
Teviotdale	Mrs. D. B. McEachern, Cotswold.	Miss Jessie Douglas, Cotswold.
Victoria, East—		
Bobcaygeon	Mrs. Stewart, Box 37	Mrs. J. Thurston.
Burnt River	Mrs. J. Hodgson	Mrs. E. R. Hopkins.
Cameron	Mrs. W. Harris	Mrs. W. Fell.
Fenelon Falls	Mrs. D. Gould	Mrs. D. Jewell.
Omemee	Mrs. Cottingham	Mrs. J. Wylie.
Pleasant Valley	Mrs. Jos. Moynes, Fenelon Falls.	Miss Flora Thurston, Fenelon Falls.
Victoria, West—		
Cambray	Mr. Geo. Bayshaw	Mrs. W. B. Feir.
Linden Valley	Mrs. J. B. Cruess	Mrs. C. L. Rogers.
Lindsay	Mrs. A. Milne	Mrs. F. Crandall.
Little Britain	Mrs. J. F. Dix	Mrs. W. W. Sloan.
Lorneville	Miss L. Ward	Mrs. J. T. Newman.
Islay	Mrs. Wm. Wilson	Miss M. Currins.
Oakwood	Mrs. R. G. Webster	Mrs. M. Webster.
Valentia	Mrs. Arthur Swain	Mrs. C. R. Crozier.
Woodville	Mrs. G. Prouse	Miss M. Ross.
Waterloo, North—		
Conestogo	Miss Ida Snider	Mrs. Geo. A. Bowman.
Floradale	Mrs. Geo. Class	Mrs. M. Snider.
Hawkesville	Mrs. B. J. Ballard	Miss L. M. Lackner.
Linwood	Mrs. G. G. Manser	Miss A. Ruler.
St. Jacob's	Mrs. E. Richmond	Miss Lydia Filsinger.
Wellesley	Mrs. H. K. Forler	Miss L. Bellinger.
West Montrose	Mrs. C. D. Bowman	Miss M. M. Morrell.
Winterbourne	Mrs. And. Brown, sen.	Mrs. J. G. Hurst, Conestogo.
Waterloo, South—		
Ayr	Miss E. D. Watson	Miss Margaret Kyle.
Branchton	Mrs. Jno. McDonald	Miss Ella Harvie.
Cedar Creek	Mrs. R. K. Cowan, Galt	Miss Susan Moore, Galt.
Central Dumfries	Mrs. Jno. Taylor, jr., Galt	Miss Hanna Slater, Galt.
Galt	Mrs. Wm. Cole	Miss Mabel Cowan.
Hespeler	Mrs. R. H. Knowles	Mrs. W. A. Coleman.
New Dundee	Mrs. A. T. Rice	Miss Addie Copley.
Preston	Mrs. Dr. Mulloy	Mrs. F. W. Cornell.
Welland—		
Allanburg	Mrs. R. Sawyer	Miss Frances Ware.
Humberstone	Mrs. R. H. Appleyard	Mrs. W. W. Knisley.
Bowen Road	Mrs. Al. Merryweather, Bridgeburg.	Miss Emma Wale, Bridgeburg.
Ridgeway	Mrs. Geo. Sexsmith	Mrs. M. S. Pound.
Stevensville	Mrs. Wm. Robinson	Mrs. G. H. Richardson.
Sherkston	Mrs. A. N. Sherk	Mrs. Wilmer Sherk.
Welland	Mrs. T. D. Cowper	Mrs. Jno. Gaiser.
Willoughby	Mrs. W. Detenbeck, Black Creek.	Miss Phoebe King, Snyder.
Wellington, Centre—		
Belwood	Mrs. J. Pratt	Mrs. W. Edwards.
Bethany	Mrs. Jas. Lasky, Ponsonby	Miss M. Hall, Ariss.
Coningsby	Mrs. J. W. Burt	Miss M. McArthur.
Erin	Mrs. G. F. Sutton	Miss M. Young.
Hillsburg	Mrs. Charlton	Miss Annie Nodwell.
Marsville	Mrs. S. Price	Mrs. E. Nodwell, Reading.
Metz	Mrs. E. Ellis	Mrs. W. Short.
Orton	Mrs. Rev. Kaye	Miss M. Heath.
Ospringe	Miss A. Currie	Miss G. Baldie.

Wellington, East—			
Arthur	Mrs. Jas. Paulin	Mrs.	Peter Greig.
Cedarville	Mrs. Hopf	Miss	B. Stewart.
Colbeck	Mrs. T. H. Hamilton, Monticello.	Mrs.	Wm. McKinley, Monticello.
Conn	Mrs. H. McPherson	Miss	Jean Cannon.
Damascus	Mrs. A. Elliott	Miss	M. Anderson.
Grand Valley	Mrs. Geo. Nodwell	Miss	S. J. Tibbutt.
Kenilworth	Miss Annie Waters	Miss	Gertrude Waters.
Mount Forest	Mrs. J. J. Cook	Miss	Gertrude King.
Wellington, South—			
Aberfoyle	Mrs. C. McBeath	Miss	G. McLean.
Arkell	Mrs. R. Petty	Miss	A. Iles.
Everton	Mrs. D. Talbot	Miss	N. Abbott.
Marden	Mrs. Wm. Cowan, Ariss	Miss	Ida Kirby.
Paisley Block	Miss M. Wolfe, Guelph	Miss	B. McIntosh, Guelph.
Rockwood	Mrs. Wm. Harris	Mrs.	Jas. Watson.
Wellington, West—			
Drayton	Mrs. L. Waters	Mrs.	J. W. Shorter.
Glen Allan	Mrs. Geo. Kitley	Miss	Eva Slimmon.
Moorefield	Mrs. A. Davidson	Mrs.	A. Wolfe.
Palmerston	Mrs. Wm. Richardson	Mrs.	S. A. Clarke.
Wentworth, North—			
Carlisle	Mrs. G. N. Allison	Miss	E. Livingstone, Harper's Corners.
Freelton	Mrs. Dr. McQueen	Miss	Selina Parnell.
Kirkwall and Valens	Mrs. John Lothian, Kirkwall	Miss	Sadie Coburn, Valens.
Millgrove	Mrs. E. F. Cummins	Miss	Ethel Carey.
Orkney	Mrs. A. P. Thompson	Mrs.	D. Thompson.
Rockton	Mrs. Brock Shaver	Miss	B. M. Thompson.
Sheffield	Mrs. F. Martin	Miss	V. Whitham.
Waterdown	Mrs. W. A. Ryckman	Mrs.	W. Breckon.
Westover	Mrs. John Lindsay	Miss	B. M. Lindsay.
West Flamboro	Mrs. W. Anderson	Mrs.	J. F, Thompson.
Wentworth, South—			
Ancaster	Mrs. R. S. Stevenson	Miss	Hattie Whitfield.
Blackheath	Miss F. Hanson	Miss	Nellie Blain.
Binbrook	Mrs. John Moore	Miss	Grace Kelly.
Carluke	Mrs. J. Butters	Miss	A. Morton.
Glanford	Mrs. S. J. Jones	Miss	M. E. Dickenson, N. Glanford.
Hannon	Mrs. C. E. Horning	Mrs.	C. E. Glover. [Copetown.
Jerseyville	Mrs. George Carter	Mrs.	G. W. Bonham, Box 45,
Stony Creek	Mrs. Hamilton Lee	Miss	May Glover.
Winona	Mrs. Wesley Smith	Mrs.	A. B. Foran.
York, East—			
Agincourt	Mrs. W. Green, Ellesmere	Miss	M. Scott.
Box Grove	Mrs. T. Rainey	Miss	Ella Robb.
Highland Creek	Mrs. W. J. Morrish	Miss	M. Maginn.
Markham	Mrs. T. H. Speight	Mrs.	J. A. Wales.
Scarboro Jct.	Miss Maggie Latham	Mrs.	F. E. Walton.
Stouffville	Mrs. C. W. Wismer	Mrs.	L. C. Wideman. [dale.
Thornhill	Mrs. Jas. Martin	Mrs.	D. W. Carruthers, Willow-
Victoria Square	Mrs. Walter Scott	Mrs.	E. Jennings.
York, North—			
Keswick	Mrs. Friend Morton	Mrs.	Jesse Connell.
King	Mrs. P. Wells, Eversley	Mrs.	P. E. Paxton, Temperance- [ville.
Laskay	Mrs. Wm. Boys, Strange	Mrs.	Geo. Atkinson, Strange.
Mount Albert	Mrs. Geo. Ianson	Mrs.	S. Van Dewater.
Newmarket	Mrs. John Lewis	Miss	Guila Haight.
Nobleton	Mrs. John Wilkie	Miss	K. McMurchy.
Queensville	Mrs. Albert Milne	Mrs.	T. J. Power.
Vandorf	Mrs. T. J. Spaulding, Aurora	Miss	Grace Petch, Aurora.
York, West—			
Elia	Mrs. G. Smithson	Miss	Margaret O'Dell.
Kleinburg & Nashville	Mrs. A. Houston, Nashville	Miss	Effie Wardlaw.
Lambton Mills	Mrs. S. Bryans	Mrs.	K. Scrutton.
Maple	Mrs. J. B. McLean	Miss	L. Richardson.
Mimico	Mrs. J. W. Royce	Mrs.	Wm. Lubbock.
Thistletown	Mrs. Geo. Farr	Miss	T. Kingdom.

York, West—Continued.

Woodbridge	Mrs. Arthur Harris	Miss	Mary Burton.
Weston	Mrs. J. H. Taylor	Mrs.	Coleman.
West Toronto	Mrs. A. Gilchrist, Elizabeth St.	Miss	B. Howell, 104 Louisa St.

Algoma, Centre—

Goulais Bay	Mrs. F. McKaughan	Mrs.	G. Robertson, Goulais River.
Tarantorus	Mrs. T. C. Dinsmore, Soo	Mrs.	T. O. Brown, Soo.
West Korah	Mrs. C. Nixon, Sault Ste. Marie.	Mrs.	Hy. Knight, Jr., Box 976, Sault Ste. Marie.
South Prince	Mrs. W. Anderson, Roundwood.	Miss	W. Westcott, Roundwood.

Algoma, North Shore—

Desbarats	Mrs. James Robinson	Mrs.	W. H. Butterworth.
Echo Bay	Mrs. G. W. Wilkinson	Miss	Violet Osborne.
MacLennan	Mrs. Jas. Junior	Mrs.	H. A. Robinson.

Kenora—

Dryden	Mrs. A. L. Orvis	Mrs.	D. Hutchison.
Eagle River	Mrs. Annie Dearlove	Mrs.	Nellie Lucas.
Oxdrift	Mrs. W. J. Robinson	Mrs.	Sylvester Hall.

Manitoulin, East—

Big Lake	Mrs. James Hutchinson	Mrs.	H. Bassingthweight.
Green Bay	Mrs. L. W. Ferguson	Miss	Eliza Stringer.
Hilly Grove	Mrs. Wm. McKinnon, Manitowaning.		
Little Current	Mrs. R. English	Mrs.	E. Mackie.
Mindemoya	Mrs. J. King	Miss	M. Cushing.
Providence Bay	Mrs. A. Caddell	Mrs.	J. A. Palmer.
Sheguindah	Mrs. J. Nevills	Mrs.	Jos. Dunlop.
South Bay Mouth	Mrs. V. C. Wilman	Mrs.	J. C. McGauley.
Tehkummah	Mrs. D. Hopkin	Mrs.	Thos. Smeltzer.

Manitoulin, West—

Grimesthorpe	Mrs. R. Cranston, Spring Bay	Miss	Minnie Wilson.
Kagawong (Billings)	Mrs. R. Lustain	Mrs.	John Greenfield.
Poplar	Mrs. G. Moscrop	Miss	Millie Baker.
Silver Water	Mrs. W. S. Cook, Fernlee	Miss	Henrietta Smith, Fernlee.

Parry Sound, East—

Burk's Falls	Mrs. E. E. Wallis, Stirling Falls.	Mrs.	G. C. Church.
Golden Valley	Miss L. Murphy	Mrs.	A. Shortland.
Granite Hill	Mrs. Jos. Booth, Commanda	Mrs.	John Clarke.
Loring	Mrs. Jacob E. Ratz	Miss	Gertrude Forsythe.
Magnetawan	Mrs. (Dr.) Freeborn	Mrs.	W. R. Irwin.
Midlothian	Mrs. Nelson Wildfong	Miss	Emma Rousell.
Restoule	Mrs. James McVeety	Mrs.	W. Edwards, Carr.
Ryerson	Mrs. C. D. Lawrence, Sprucedale.	Miss	G. Judd, Doe Lake.
South River	Mrs. Percy Bottomley	Miss	Olive Spiessmann.
Trout Creek	Mrs. C. Culpack	Miss	C. A. McDonald.

Rainy River—

Barnhart	Mrs. Arthur Law	Mrs.	Ella Darlington.
Barwick	Mrs. Wm. Horley	Mrs.	G. Lindsell.
Emo	Mrs. John Kennedy	Mrs.	John Durand.
Shenstou	Mrs. John Potter	Mrs.	L. Stewart.
Stratton	Mrs. W. H. Weir	Mrs.	H. E. Theker.

St. Joseph's Island—

Kentvale (Harmony)	Mrs. T. McDermott, Jocelyn	Mrs.	H. Young, Jocelyn.
Marksville	Mrs. W. Totten	Miss	G. Steinburg.
Richard's Landing	Mrs. W. J. Armstrong	Mrs.	J. A. Montgomery.

Temiscamingue—

Bucke Township	Mrs. John Westron, Haileybury.	Mrs.	W. Kirstine, Haileybury.
Hanbury	Mrs. J. R. Baker	Mrs.	Ernest Routliffe.
Hilliardton	Mrs. Donald McNair	Mrs.	Alex. Shelp.
Hillview	Mrs. E. Sackrider	Mrs.	W. G. Howie.
Milberta	Mrs. Joe Henderson	Mrs.	J. R. Philp.
Uno Park	Mrs. R. Parker	Mrs.	J. Welbourne.

Thunder Bay—

Conmee	Mrs. J. Corles	Mrs.	Wm. Caldwell, Kakabeka [Falls.
Dorion	Mrs. Emery	Mrs.	J. A. Keatley.
Hymers	Mrs. Withernshaw	Miss	Maggie Brown.
Murillo	Mrs. A. Boulter	Mrs.	J. Hahn.
O'Connor	Mrs. C. Hill	Mrs.	C. Garbutt.
Slate River Valley	Mrs. D. J. Piper	Mrs.	Jas. McGregor.
South Gillies	Mrs. F. E. Hawkes	Mrs.	H. Hayward.

REPORT

OF THE

WOMEN'S INSTITUTES

OF THE

Province of Ontario

1909

PART II.

List of Meetings and Speakers

(PUBLISHED BY THE ONTARIO DEPARTMENT OF AGRICULTURE, TORONTO)

PRINTED BY ORDER OF
THE LEGISLATIVE ASSEMBLY OF ONTARIO

TORONTO
Printed by L. K. CAMERON, Printer to the King's Most Excellent Majesty
1909

Printed by WARWICK BROS. & RUTTER, Limited,
TORONTO

WOMEN'S INSTITUTES OF ONTARIO.

ANNOUNCEMENT OF SUPERINTENDENT, 1909.

In this volume will be found announcements of the summer series of Women's Institute meetings ; also joint meetings of Farmers' and Women's Institutes in the northern sections of the Province. The names of the lecturers and their subjects will also be found herein, together with information as to their qualifications and preparation for the work.

Statistics regarding finances, membership, meetings held during the year, etc., will be found in Part I. of the Women's Institute report. We beg to summarize in this volume as follows:—There are organizations in 91 electoral districts with branches established at 502 points, and a membership of 13,550. While we cannot at this time give the exact attendance for 1908-9, it is over 100,000.

Besides the meetings announced herein, lady lecturers were sent out to a number of Women's Institute meetings held in conjunction with Farmers' Institute meetings during the winter months. About 350 places were thus visited during the winter of 1908-09.

In a general survey of the Women's Institutes of Ontario, we can record gradual progress since the regular series of meetings one year ago. In the nature of the subjects to which prominence has been given by the local organizations, the readiness with which the membership generally has assisted in the programmes of the local societies, and the resourcefulness of the officers in financing the Institutes, and other matters upon which the success of the work depends, we can register advancement. No definite line of work has been mapped out for all Institutes. Some organizations have, however, on their own account, secured instructors in domestic science and domestic art and have followed a definite line of study for a short period. The Institutes generally have depended almost entirely upon local talent and have secured literature (standard works and periodicals) best suited to their membership, as the funds of the organizations would allow. By a judicious use of standard works on foods, sanitation, hygiene, architecture, home management, training in the home, etc., and the utilization of the excellent articles which appear in our newspapers, journals, and other periodicals, the capable and intelligent women of Ontario are applying this great fund of information in a practical, common sense manner, which has resulted in papers, addresses and discussions of inestimable value to the home makers of the Province. The most efficient home managers are rallying about the Institutes and the dissemination of knowledge gained through years of practical and successful experience is being made the common property of the Institute members.

Prominence is given to the comparative value of our common foods, and the study of food subjects generally is being followed in a more intelligent manner. The interchange of recipes and the discussion of methods of work still receive due consideration, and it is to be hoped that such topics will continue to be given prominence. But there is evidence of increased attention to such topics as "The Training of the Children in the Home and in the School," "Woman's Work from a Broad View Point," "Personal and Household Hygiene," "The Responsibilities of Mothers," "The Sacredness of the Body," "The Introduction of Best Literature," "The General Improvement of Rural Conditions," etc., etc.

The interchange of programmes on the part of Institutes conveniently located, and the successful efforts of manysocieties to interest the young women and girls of the Institute, give assurance for the permanency of the work.

Joint meetings on the part of Women's Institutes and Farmers' Institute Clubs have proved of great interest and stimulus to both organizations. It is to be hoped that the Women's Institutes will lend their assistance to a further extension of Farmers' Institute Clubs. We believe that every community where a Women's Institute is organised should also have a

local club for the benefit of the farmers. One of the greatest factors towards a betterment of rural conditions is the introduction of methods which will result in a greater net return on the part of the farmers, and we know of no facilities for study or means for the dissemination of agricultural knowledge which have greater possibilities for good than the local club. If the average farmer can be shown how to produce more per acre and increase the net returns from his stock, we have the basis upon which we can establish a better community and home life. We appeal to the Women's Institutes to lend their encouragement in the establishment of such clubs next winter and fall. We are confident that the local Farmers' Institute Club will be an encouragement to the Women's Institute, and the co-operation of the two societies will be mutually helpful.

ADVICE TO OFFICERS.

We beg to refer officers to page 36 of the hand book for advice regarding advertising. Do not fail to utilise the local papers. The editors, throughout the country districts especially, have shown their appreciation of the Women's Institute by giving publicity to announcements and reports of meetings and we can, I am sure, depend upon their continued hearty co-operation.

District and branch officers should have a definite understanding as to the method to be followed in advertising each meeting. Let there be no failure in this respect.

See that the place of meeting (hall, school-house, private home, etc.,) is given on all your announcements.

Advertise for a definite hour and start the meeting at the time announced.

In some places it is not necessary to get out large posters to advertise the meeting. In many places, however, the large poster will result in a much increased attendance.

Officers will please consider very carefully local conditions and advertise accordingly.

Do not fail to make it clear that all women and grown-up girls will be made welcome to the afternoon meetings, and both men and women, boys and girls, to the evening sessions.

In many instances we have announced only one delegate. In all such cases we shall look to the local Institute officers to arrange for assistance to be given the delegates. One delegate will not occupy the whole time of the meeting. Musical selections, readings or addresses on the part of the members of the Institute should be definitely planned for and announcements made accordingly.

Demonstrations in cooking will be given only by the speakers indicated thus *.

When only one delegate visits a society, it will not be expected that she will give a demonstration.

Urge your members to come to the meetings with note-book and pencil. It will also be well to arrange for a question drawer along lines indicated by the subject announced for your delegate or delegates.

The success of the meetings will depend largely upon the thoroughness of the advertising and the completeness with which local arrangements are made.

GEO. A. PUTNAM,
Superintendent.

Parliament Buildings,
Toronto, April, 1909.

Summer Series of Women's Institute Meetings, 1909.

Afternoon sessions will for the most part be held at 2 o'clock and evening sessions at 8 o'clock: the officers of the Institutes concerned, however, have the privilege of choosing the exact hour and making local announcements accordingly. "Aft." indicates an afternoon session only, "Eve." an evening session only. At other places it is expected that both afternoon and evening sessions will be held. Readers are referred to local announcements for full particulars.

The lecturers indicated thus * will be prepared to give demonstrations in cooking. Full announcements regarding the demonstrations to be given by each and the articles required, together with such other information as will be helpful to Institute officers, will be given by correspondence to the Secretaries of the Branches concerned. The Secretaries will please notify delegates of the demonstration chosen and see that the necessary articles are provided.

The head of each deputation will be prepared to devote ten or fifteen minutes to the discussion of methods of work, if so desired. She will also be prepared to give some advice as to how best to make the monthly meetings of greatest interest and profit.

DIVISION 1. Miss H. McMurchie, Harriston. May 26—July 2.

1	Hatchley, Private residence	South Brant (aft)	May	26
2	Burford, Rutherford's hall	South Brant (aft)	"	27
3	Cathcart, Kelly's hall	South Brant (aft)	"	28
4	Mohawk, Private residence	South Brant (aft)	"	29
5	Ohsweken, Council house	South Brant	"	31
6	Onondaga { Mrs. C. Edward's home	North Brant (aft)	June	1
	Onondaga { Town hall	North Brant (eve)	"	1
7	Tranquility, Tranquility School house	North Brant (aft)	"	2
8	Paris, Y.M.C.A.	North Brant (aft)	"	3
9	Glen Morris, Town hall	North Brant	"	4
10	Sheridan, Temperance hall	Halton	"	5
11	Trafalgar, Township hall	Halton	"	7
12	Palermo, Temperance hall	Halton (ait)	"	8
13	Nelson, Town hall	Halton	"	9
14	Burlington, Library	Halton (aft)	"	10
15	Georgetown, Town hall	Halton (eve)	"	11
16	Ballinafad, Town hall	Halton	"	12
17	Moffatt, Brokeville Town hall	Halton	"	14
18	Kilbride, McGregor's hall	Halton	"	15
19	Waterdown, McGregor's hall	North Wentworth	"	16
20	Millgrove, Town hall	North Wentworth	"	17
21	Carlisle, Orange hall	North Wentworth	"	18
22	Freelton, McFarlane's hall	North Wentworth (aft)	"	19
23	Kirkwall, Mrs. John McQueen's home	North Wentworth	"	21
24	Sheffield Town hall	North Wentworth	"	22
25	Westover, Oddfellow's hall	North Wentworth	"	23
26	West Flamboro, Mrs. Newcombe's home	North Wentworth	"	24
27	Canboro, Town hall	Monck	"	25
28	Winger, Disciple church	Monck	"	26
29	Wellandport, Misner's hall	Monck	"	28
30	Pelham Centre, Fenwick hall	Monck	"	29
31	Silverdale, School house	Monck	"	30
32	Smithville, Brant's hall	Monck	July	2

DIVISION 2. Miss B. Millar, Guelph, May 26 to July 6; *Miss M. Gray, Toronto, May 26 to June 5; June 17 to July 6.

1	Humberstone, Town hall	Welland (eve)	May	26
2	Sherkstone, Mrs. A. N. Sherk's home	Welland (aft)	"	27
3	Ridgeway, Public library	Welland (aft)	"	28
4	Bowen Road, School house	Welland (aft)	"	29
5	Stevensville, Johnson's hall	Welland (eve)	"	31
6	Willoughby, Township hall	Welland (aft)	June	1
7	Allanburg, Town hall	Welland (aft)	"	2
8	Queenston, Mrs. Wallace Armstrong's home.	Lincoln	"	3
9	Jordan, Victoria hall	Lincoln	"	4

DIVISION 2—Continued.

10	Beamsville, Reception hall	Lincoln	June	5
11	Winona, Private house	South Wentworth (aft)	"	7
12	Stoney Creek, Institute hall	South Wentworth (aft)	"	8
13	Tapleytown	South Wentworth	"	9
14	Binbrook, Temperance hall	South Wentworth (aft)	"	10
15	Blackheath, Mrs. Huttey's home	South Wentworth (aft)	"	11
16	Glanford, Mt. Hope Methodist S. room	South Wentworth (aft)	"	12
17	Hannon, Mrs. Henry Glover's home	South Wentworth (aft)	"	14
18	Ancaster, Pendall's hall	South Wentworth (eve)	"	15
19	Jerseyville, Lee's hall	South Wentworth (aft)	"	16
20	Caledonia, Hall	Haldimand (aft)	"	17
21	Hagersville, Hager's hall	Haldimand	"	18
22	Springvale, C.O.C.F. hall	Haldimand	"	19
23	Jarvis	Haldimand (aft)	"	21
24	Nanticoke	Haldimand (aft)	"	22
25	Sandusk, Mrs Evan's home	Haldimand (aft)	"	23
26	Cheapside, Hall	Haldimand (aft)	"	24
27	Selkirk, Baptist church	Haldimand	"	25
28	South Cayuga, Mrs. Fluher's home	Haldimand (aft)	"	26
29	Rainham Centre, Hall	Haldimand (aft)	"	28
30	Fisherville, Town hall	Haldimand (aft)	"	29
31	Gill, { Mrs. Gie's home	Haldimand (aft)	"	30
	{ Church	Haldimand (eve)	"	30
32	Clanbrassil, Church	Haldimand (aft)	July	2
33	Decewsville, C.O.C.F. hall	Haldimand	"	3
34	Canfield, Church	Haldimand	"	5
35	York, S.S. hall	Haldimand	"	6

DIVISION 3. Miss G. Gray, Toronto, May 26 to June 23; Mrs. T. Shaw, Hespeler, June 24 to July 9; *Miss M. Govenlock, Seaforth, Ont., June 16 to July 9.

1	Arthur, Kennedy's hall	East Wellington	May	26
2	Damascus, Township hall	East Wellington	"	27
3	Kenilworth, School house	East Wellington	"	28
4	Conn, Orange hall	East Wellington	"	29
5	Cedarville, Orange hall	East Wellington	"	31
6	Mount Forest, Allan's hall	East Wellington (aft)	June	1
7	Colbeck, Mrs. W Bull's home	East Wellington	"	2
8	Grand Valley, Methodist ch. basement	East Wellington	"	3
9	Bowling Green	Dufferin (aft)	"	4
10	Laurel, Presbyterian church	Dufferin (eve)	"	4
11	Whittington, Methodist church	Dufferin	"	5
12	Camilla, St. Andrew's church	Dufferin	"	7
13	Orangeville, Carnegie library auditorium	Dufferin	"	8
14	Blount, Church	Dufferin	"	9
15	Corbetton, Orange hall	Dufferin	"	10
16	Keldon, Church	Dufferin	"	11
17	Shelburne, Methodist church	Dufferin	"	12
18	Horning's Mills, Methodist church	Dufferin	"	14
19	Honeywood, Methodist church	Dufferin	"	15
20	Creemore, May's hall	West Simcoe	"	16
21	Avening, School house	West Simcoe	"	17
22	Everett, Orange hall	West Simcoe	"	18
23	Duntroon, Bridge's hall	West Simcoe (aft)	"	19
24	Singhampton, Hamilton's hall	West Simcoe	"	21
25	Batteau, The Cottage	West Simcoe	"	22
26	Sunnidale Corners, Mill's hall	West Simcoe	"	23
27	New Flos	Centre Simcoe	"	24
28	Edenvale, Hall	Centre Simcoe	"	25
29	Minesing, A.O.U.W. hall	Centre Simcoe (aft)	"	26
30	Phelpston, Hall	Centre Simcoe (aft)	"	28
31	Allanwood, Methodist church	Centre Simcoe (aft)	"	29
32	Elmvale, Lance hall	Centre Simcoe	"	30
33	Wyebridge, Temperance hall	Centre Simcoe	July	2
34	Randolph, Mrs. A. J. McMillan's home	Centre Simcoe (aft)	"	3
35	Orillia, St. James' school house	East Simcoe	"	5
36	Stroud, { Mrs. Patterson's home	South Simcoe (aft)	"	6
	{ Temperance hall	South Simcoe (eve)	"	6
37	Churchill, Orange hall	South Simcoe	"	7
38	Bradford, Old Kirk Scotch Line	South Simcoe	"	8
37	Newton Robinson, Orange hall	South Simcoe (aft)	"	9

Division 4. *Miss G. Carter, Guelph, May 27th to July 9th; Mrs. V. G. Loree, Hamilton, May 27th to June 4th; Mrs. W. Breckon, Waterdown, July 2nd to 9th.

1	Thorndale, Harding hall	East Middlesex (aft.)	May	27
2	Wilton Grove	East Middlesex (aft.)	"	28
3	Harrietsville { Private lawn	East Middlesex (aft.)	"	29
	Harrietsville { I. O. F. hall	East Middlesex (eve.)	"	29
4	Strathroy, St. John's hall	West Middlesex (aft.)	"	31
5	Napier, Town hall	West Middlesex	June	1
6	Appin, Orange hall	West Middlesex	"	2
7	Iona	West Elgin	"	3
8	Dutton, Fletcher's hall	West Elgin (aft.)	"	4
9	Rodney, Whitton's hall	West Elgin	"	5
10	Mapleton, Mrs. Chas. Dance's home	East Elgin (aft.)	"	7
11	Lyons, Hall	East Elgin	"	8
12	Springfield, Stewart's hall	East Elgin	"	9
13	Aylmer, Town hall	East Elgin	"	10
14	Luton, Church	East Elgin	"	11
15	Bayham, Richmond church	East Elgin (aft.)	"	12
16	Port Burwell, Private house	East Elgin (aft.)	"	14
17	Guysboro, Orange hall	North Norfolk (aft.)	"	15
18	Courtland, Town hall	North Norfolk	"	16
19	Delhi, Council chamber	North Norfolk	"	17
20	Windham Centre, Town hall	North Norfolk (aft.)	"	18
21	Simcoe, Council chamber	North Norfolk (aft.)	"	19
22	Tyrrell, Town hall	North Norfolk	"	21
23	Embro, McClelland's hall	North Oxford	"	22
24	Kintore	North Oxford	"	23
25	Harrington, Hill's hall	North Oxford (aft.)	"	24
26	Braemar, Gospel hall	North Oxford	"	25
27	Princeton, Foresters' hall	North Oxford	"	26
28	Drumbo, Town hall	North Oxford (aft.)	"	28
29	Bright, Presbyterian church	North Oxford (aft.)	"	29
30	Plattsville, Methodist S. S. room	North Oxford (aft.)	"	30
31	Beachville, Library hall	South Oxford (aft.)	July	2
32	Folden's, Hall	South Oxford (aft.)	"	3
33	Currie's Crossing, Methodist church	South Oxford (aft.)	"	5
34	Burgessville, Mrs. E. Jacques' home	South Oxford (aft.)	"	6
35	Tillsonburg	South Oxford	"	7
36	Brownsville, Town hall	South Oxford	"	8
37	Mount Elgin, Methodist church	South Oxford	"	

Division 5.—Mrs. Colin Campbell, Windsor, May 26th to July 14th; *Miss I. Hyland, Toronto, June 14th to July 2nd.

1	Bethany, Church basement	Centre Wellington (aft.)	May	26
2	Metz, Orange hall	Centre Wellington	"	27
3	Belwood, Town hall	Centre Wellington	"	28
4	Coningsby, Schoolhouse	Centre Wellington (aft.)	"	29
5	Ospringe, Swackhammer's hall	Centre Wellington (aft.)	"	31
6	Hillsburg, Workman's hall	Centre Wellington	June	1
7	Marsville, Anthony's hall	Centre Wellington (aft.)	"	2
8	Orton, Methodist church	Centre Wellington	"	3
9	Erin, Town hall	Centre Wellington (aft.)	"	4
10	Hopeville, McArdle's hall	Centre Grey	"	5
11	Dundalk	Centre Grey	"	7
12	Badjeros, Schoolhouse	Centre Grey	"	8
13	Maxwell, Methodist church	Centre Grey	"	9
14	Flesherton, Town hall	Centre Grey	"	10
15	Priceville, Watson's hall	Centre Grey	"	11
16	Vandeleur, Forester's hall	Centre Grey	"	12
17	Kimberly, Public hall	Centre Grey	"	14
18	Ravenna, Township hall	Centre Grey	"	15
19	Heathcote, Orange hall	Centre Grey	"	16
20	Temple Hill, Presbyterian church	Centre Grey	"	17
21	Walter's Falls	Centre Grey	"	18
22	Williamsford, Maccabees' hall	Centre Grey	"	19
23	Harriston, Town hall	Union (aft.)	"	21
24	Teviotdale, Cotswold School hall	Union (aft.)	"	22
25	Clifford, Oddfellows' hall	Union (aft.)	"	23
26	Drew, Temperance hall	Union (aft.)	"	24

DIVISION 5.—Continued.

27	Holstein, Robert's hall	South Grey (aft.)	June	25
28	Robb, Mr. Irwin Robb's home	South Grey (eve.)	"	26
29	Dromore, Russell hall	South Grey	"	28
30	Ayton, Doerson's hall	South Grey (aft.)	"	29
31	Hanover, Miller's hall	South Grey (aft.)	"	30
32	Elmwood, Wildfang's hall	South Grey	July	2
33	Desboro, Township hall	North Grey (aft.)	"	3
34	Kilsyth, Township hall	North Grey	"	5
35	Meaford, Council room	North Grey (aft.)	"	6
36	Annan, Basement of church	North Grey	"	7
37	Brookholm, Basement St. Paul's church	North Grey (aft.)	"	8
38	Kemble, Public Library hall	North Grey (aft.)	"	9
39	Clavering, Schoolhouse No. 3	North Grey	"	10
40	Hepworth, Spring Creek Sh. No. 6	North Bruce	"	12
41	Wiarton, Council chamber	North Bruce	"	13
42	Lion's Head, Township hall	North Bruce	"	14

DIVISION 6. Mrs. M. L. Ashley, Londesboro, May 26th to July 13th; Mrs. W. Woelard, Forest, June 26th to July 13th.

1	Glen Allan, Knox church	West Wellington (aft.)	May	26
2	Rothsay, Temperance hall	West Wellington (aft.)	"	27
3	Palmerston, Anderson's hall	West Wellington (aft.)	"	28
4	Listowel, Schoolhouse	North Perth	"	29
5	Millbank, Oddfellows' hall	North Perth	"	31
6	Milverton, Foresters' hall	North Perth	June	1
7	Hampstead, Mr. Jacob Fleischhauer's home	North Perth	"	2
8	Tavistock, Society hall	South Perth	"	3
9	Staffa, Township hall	South Perth	"	4
10	Fullerton, Township hall	South Perth	"	5
11	Mitchell, Town hall	South Perth	"	7
12	Sebringville, Private house	South Perth	"	8
13	St. Marys, Town hall	South Perth	"	9
14	Kirkton, Aberdeen hall	South Perth (aft.)	"	10
15	Clinton, Council chamber	West Huron	"	11
16	Homesville, Mrs. Mulholland's	West Huron (aft.)	"	12
17	Bayfield, Town hall	South Huron	"	14
18	Exeter, Semor's hall	South Huron	"	15
19	Londesboro, Peffer's hall	West Huron	"	16
20	Wingham, C.O.F. hall	West Huron	"	17
21	St. Helens, Public hall	West Huron	"	18
22	Kintail, Young's hall	West Huron	"	19
23	Ripley, Agricultural hall	Centre Bruce (aft.)	"	21
24	Bervie, Orange hall	Centre Bruce (aft.)	"	22
25	Kincardine, Council chamber	Centre Bruce (aft.)	"	23
26	Lucknow, Town hall	South Bruce (aft.)	"	24
27	Teeswater, Town hall	South Bruce (aft.)	"	25
28	Bluevale, Foresters' hall	East Huron	"	26
29	Jamestown, { Mrs. Jas. Cutt's home / Victoria hall	East Huron (aft.)	"	28
		East Huron (eve.)	"	28
30	Walton, A.O.U.W. hall	East Huron	"	29
31	Ethel, Township hall	East Huron	"	30
32	Molesworth, Orange hall	East Huron	July	2
33	Gorrie, Town hall	East Huron	"	3
34	Mildmay, Town hall	South Bruce	"	5
35	Walkerton, Private house	South Bruce (aft.)	"	6
36	Paisley, Council chamber	Centre Bruce	"	7
37	Williscroft	Centre Bruce	"	8
38	Port Elgin, Public Library	West Bruce	"	9
39	Arkwright, Town hall	West Bruce (aft.)	"	10
40	Tara, Council chamber	West Bruce	"	12
41	Allanford, Orange hall	West Bruce	"	13

DIVISION 7. Mrs. F. W. Watts, Clinton, May 26th to July 6th; *Miss N. B. Hall, Bowmanville, May 26th to June 5th; June 15th to July 6th.

1	Hespeler, Mrs. Gretzner's home	South Waterloo (aft.)	May	26
2	Preston	South Waterloo (aft.)	"	27
3	Galt { Town hall / Mrs. P. W. Gardiner's home	South Waterloo (eve.)	"	27
		South Waterloo (aft.)	"	28

Division 7.—Continued.

4	Ayr, McGeorge's hall	South Waterloo (aft.)	May	29
5	Cedar Creek, Miss S. Moore's home	South Waterloo (aft.)	"	31
6	Branchton, Harvie's hall	South Waterloo (aft.)	June	1
7	Doon, Hall	South Waterloo (aft.)	"	2
8	New Dundee, Dundee hall.	South Waterloo	"	3
9	Mannheim	South Waterloo (aft.)	"	4
10	New Hamburg, Wm. Tell hall	South Waterloo (aft.)	"	5
11	Wellesley, Town hall	North Waterloo (aft.)	"	7
12	Linwood, Oddfellows' hall	North Waterloo	"	8
13	Hawkesville, Ballard's hall	North Waterloo	"	9
14	Conestogo, Township hall	North Waterloo	"	10
15	Winterbourne, St. Andrew's hall.	North Waterloo (aft.)	"	11
16	West Montrose, Jupp's hall	North Waterloo	"	12
17	Floradale, Steddick's hall	North Waterloo (aft.)	"	14
18	Rockwood, Friend's church	South Wellington (aft.)	"	15
19	Everton	South Wellington (aft)	"	16
20	Arkell, School house	South Wellington (aft.)	"	17
21	Paisley Block	South Wellington (aft.)	"	18
22	King.	North York	"	19
23	Nobleton, Methodist church	North York (aft.)	"	21
24	Laskay, Hall	North York	"	22
25	Vandorf, Vandorf hall	North York (aft.)	"	23
26	Newmarket, Mrs. C. F. Doane's home	North York (aft.)	"	24
27	Queensville, Presbyterian hall	North York	"	25
28	Mount Albert, Mrs. C. F. Cooke's home	North York (aft.)	"	26
29	Malton, Mrs. Jas. McKay's home	Peel (aft.)	"	28
30	Tullamore, Orange hall	Peel (aft.)	"	29
31	Cheltenham, Mrs. W. W. Wilkinson's home.	Peel (aft.)	"	30
32	Belfountain, Methodist church	Peel (aft.)	July	2
33	Alton, Science hall	Peel	"	3
34	Mono Road, Society hall	Peel (aft.)	"	5
35	Bolton, Council Chamber	Peel (aft.)	"	6

Division 8. Miss L. Shuttleworth, Toronto, May 26th to July 17th; Miss J. Smillie, Sheffield, May 26th to July 17th.

1	Highgate, Methodist church	East Kent	May	26
2	Morpeth, Workman's hall	East Kent (aft.)	"	27
3	Cedar Springs, Methodist church	West Kent	"	28
4	Valetta, Township hall	West Kent	"	29
5	Port Alma, Mrs. J. Carr's	West Kent	"	31
6	Wheatley, English church	West Kent	June	1
7	Leamington, Council chamber	South Essex	"	2
8	Olinda, Hall	South Essex (aft.)	"	3
9	Harrow	South Essex	"	4
10	Amherstburg, Town hall	South Essex (aft.)	"	5
11	Essex, Town hall	South Essex (aft.)	"	7
12	Cottam.	South Essex (eve.)	"	7
13	Oldcastle, Sandwich hall	North Essex	"	8
14	Maidstone Cross, R. C. hall	North Essex (eve.)	"	9
15	Maidstone Township, Schoolhouse No. 11	North Essex (aft.)	"	10
16	South Woodslee, Pembleton's hall	North Essex	"	11
17	Comber	North Essex (eve.)	"	12
18	Tilbury, Methodist church	West Kent	"	14
19	Quinn, Union hall	West Kent	"	15
20	Irwin, Union hall, Raleigh	West Kent	"	16
21	Eberts	West Kent	"	17
22	Kent Bridge, hall	East Kent (aft.)	"	18
23	Botany, Mrs. Dan. Winter's home	East Kent	"	19
24	Thamesville, I.O.O.F. hall	East Kent (aft.)	"	21
25	Croton, Young's hall	East Kent (aft.)	"	22
26	Coldstream, Town hall	North Middlesex	"	23
27	Lobo, Masonic hall	North Middlesex	"	24
28	Ailsa Craig, Council chamber	North Middlesex	"	25
29	Parkhill, Town hall	North Middlesex	"	26
30	Greenway, Wilson's hall	North Middlesex (aft.)	"	28
31	West McGillivray, Town hall	North Middlesex	"	29
32	Sylvan, Schoolhouse	North Middlesex (aft.)	"	30

DIVISION 8.—Continued.

33	Thedford, Tudor's hall	East Lambton (aft.)	July	2
34	Arkona	East Lambton	"	3
35	Forest, Council chamber	East Lambton (aft.)	"	5
36	Warwick, Town hall	East Lambton	"	6
37	Camlachie, K.O.T.M. hall	East Lambton	"	7
38	Wyoming, Methodist league room	East Lambton (aft.)	"	8
39	Osborne, Baptist Church	West Lambton (aft.)	"	9
40	Colinville, C.O.C.F. hall	West Lambton (aft.)	"	10
41	Brigden, Taylor's hall	West Lambton (aft.)	"	12
42	Oil Springs, Methodist church	West Lambton	"	13
43	Alvinston, Council chamber	East Lambton (aft.)	"	14
44	Inwood	East Lambton	"	15
45	Shetland, Church lawn	East Lambton	"	16
46	Maple Grove	East Lambton	"	17

DIVISION 9. Miss M. Yates, O.A.C., Guelph, May 25th to June 21st; June 28th to July 2nd; Mrs. J. E. Brethour, Burford, June 22nd to 26th; Dr. McAlphine, Toronto, June 22nd to 26th.

1	West Toronto, College of Music	West York	May	25
2	Mimico, Mrs. H. C. Tremaine's home	West York (aft.)	"	26
3	Islington, Methodist church	West York (aft.)	"	27
4	Lambton Mills, Mrs. S. Bryan's home	West York (eve.)	"	27
5	Weston, Town hall	West York (aft.)	"	28
6	Thistleton	West York	"	29
7	Woodbridge, Orange hall	West York	"	31
8	Kleinburg	West York	June	1
9	Maple, Masonic hall	West York (aft.)	"	2
10	Edgely	West York (aft.)	"	3
11	Elia, Forresters hall	West York	"	4
12	Lorneville	West Victoria	"	5
13	Glenarm	West Victoria	"	7
14	Isley	West Victoria	"	8
15	Cameron	East Victoria	"	9
16	Fenelon Falls, Dickson's hall	East Victoria	"	10
17	Bobcaygeon, Parish hall	East Victoria (aft.)	"	11
18	Omemee, Methodist church	East Victoria	"	12
19	Lindsay, Mrs. Crandall's home	West Victoria (eve)	"	14
20	Cambray	West Victoria	"	15
21	Linden Valley { Mrs. Terrill's home	West Victoria (aft.)	"	16
	{ Grange hall	West Victoria (eve.)	"	16
22	Little Britain, Hall	West Victoria	"	17
23	Valentia, Forresters hall	West Victoria (eve.)	"	18
24	Oakwood, Mrs. M. Webster's home	West Victoria (aft.)	"	19
25	Columbus, Purvis hall	South Ontario (aft.)	"	21
26	Whitby, Council chamber	South Ontario (aft.)	"	22
27	Pickering	South Ontario (aft.)	"	23
28	Whitevale, Methodist church	South Ontario (aft.)	"	24
29	Kinsale, Hall	South Ontario (aft.)	"	25
30	Claremont	South Ontario	"	26
31	Box Grove, Temperance hall	East York	"	28
32	Scarboro Junction	East York	"	29

DIVISION 9 (a). Dr. A. Backus, Aylmer.

1	Reay, Presbyterian Church	South Muskoka (eve.)	June	14
2	Muskoka Falls, Schoolhouse	South Muskoka (eve.)	"	15
3	Baysville, Town hall	South Muskoka (eve.)	"	16
4	Bracebridge, Mrs. A. Barron's home	South Muskoka (aft.)	"	17
5	Brackenrig, Schoolhouse	South Muskoka	"	18
6	Bardsville, Mrs. Thos. Donnally's home	South Muskoka (aft.)	"	19

DIVISION 10 Miss B. Duncan, Emery, May 26th to June 21st; Dr. M. McAlpine, Toronto, May 26th to June 4th; Miss B. Gilholm, Bright, June 22nd to 29th; Miss V. Powell, Whitby, June 22nd to 29th.

1	Nestleton, C.O.F. hall	West Durham	May	26
2	Springville, Sunday School room	East Durham (aft.)	"	27
3	Mount Pleasant, Temperance hall	East Durham (aft.)	"	28

Division 10—Continued.

4	Millbrook, Council room	East Durham (aft.)	"		29
5	Bailieboro, Hall	East Durham (aft.)	"		31
6	Garden Hill, Temperance hall	East Durham (aft.)	June		1
7	Charlecote, Mrs. M. G. Welch's home	East Durham	"		2
8	Newtonville, Methodist church	West Durham (aft.)	"		3
9	Orono	West Durham (aft.)	"		4
10	Grafton, Private house	West Northumberland (aft.)	"		5
11	Cobourg, Mrs. R. C. Allan's home	West Northumberland (aft.)	"		7
12	Elmview, Bissell's Schoolhouse	West Northumberland (aft.)	"		8
13	Gore's Landing, Public Library	West Northumberland	"		9
14	Fenella, Temperance hall	West Northumberland	"		10
15	Roseneath, Town hall	West Northumberland (eve.)	"		11
16	Warkworth	East Northumberland	"		12
17	Castleton, Town hall	East Northumberland (aft.)	"		14
18	Dundonald, Pine Grove hall	East Northumberland (aft.)	"		15
19	Brighton, Union Schoolhouse	East Northumberland (aft.)	"		16
20	Wooler, Town hall	East Northumberland (aft.)	"		17
21	York Road, Smithfield church	East Northumberland	"		18
22	2nd Con. Sidney, Mrs. M. Farley's home	West Hastings (aft.)	"		19
23	5th Con. Sidney, Mrs. J. Hogg's home	West Hastings (aft.)	"		21
24	Queensboro, Private house	North Hastings (aft.)	"		22
25	Eldorado, Town hall	North Hastings (eve.)	"		23
26	Springbrook, Orange hall	North Hastings	"		24
27	Wellman's Corners, Orange hall	North Hastings	"		25
28	Keene, Town hall	East Peterboro	"		26
29	Warsaw, Town hall	East Peterboro	"		28
30	Uxbridge, Market hall	North Ontario (aft.)	"		29

Division 11. Miss S. Campbell, Brampton, May 26th to July 6th; Mrs. W. Breckon, Waterdown, June 5th to 14th.

1	Highland Creek	East York	May		26
2	Victoria Square	East York	"		27
3	Thornhill, Mrs. N. Chapman's home	East York	"		28
4	Stouffville, Council chamber	East York (aft.)	"		29
5	Tweed, Town hall	East Hastings	"		31
6	Roslin, Mrs. J. M. Chisholm's home	East Hastings	June		1
7	Foxboro	East Hastings	"		2
8	Melrose, Town hall	East Hastings	"		3
9	Quinte, Clazie's Schoolhouse	East Hastings	"		4
10	Rednersville	Prince Edward	"		5
11	Mountain View	Prince Edward	"		7
12	Gilbert's Mills, Church	Prince Edward	"		8
13	Bloomfield { Hicksite Meeting house / Town hall	Prince Edward (aft.) / Prince Edward (eve.)	"		9 / 9
14	Wellington, A.O.U.W. hall	Prince Edward (aft.)	"		10
15	West Lake { Mrs. Wright's home / Church	Prince Edward (aft.) / Prince Edward (eve.)	"		11 / 11
16	Picton, Methodist Church	Prince Edward	"		12
17	Cherry Valley, Church	Prince Edward (aft.)	"		14
18	Adolphustown, Town hall	Lennox	"		15
19	Conway, Hall	Lennox	"		16
20	Stella	Amherst Island (aft.)	"		17
21	Lansdowne	Leeds (aft.)	"		18
22	Newboro, Victoria hall	Leeds (aft.)	"		19
23	Perth, Town hall	South Lanark	"		21
24	Lanark, Town hall	North Lanark	"		22
25	Smith's Falls, Council chamber	South Lanark	"		23
26	Carleton Place, Council chamber	South Lanark	"		24
27	Almonte, Council chamber	North Lanark	"		25
28	Stittsville, Harten's hall	Carleton	"		26
29	City View, Mrs. W. W. Booth's home	Carleton	"		28
30	Manotick, Harmony hall	Carleton	"		29
31	Russell, Foresters' hall	Russell	"		30
32	Chesterville, Town hall	Dundas	July		2
33	Inkerman, A.O.U.W. hall	Dundas	"		3
34	Brinston's Corners, Gibson's hall	Dundas	"		5
35	Brouseville	South Grenville	"		6
36	Maynard, Church lecture room	South Grenville	"		7

NORTHERN SERIES OF FARMERS' AND WOMEN'S INSTITUTE MEETINGS, 1909.

Division 12.

Speakers:—Mr. Henry Grose, Lefroy:—Subjects "How to Increase and Maintain the Fertility of the Soil," "Selection of Seed," "Home Dairy Work," "The Growing of Clover," "Feeding and Management of Horses and Cattle," "Breeding and Judging of Heavy Horses." *Evening*—"Making Farm Life Attractive for the Boy," "Benefits of Institute Work."

Miss I. Rife, Hespeler.

1	Windermere	Muskoka Centre (aft)	May	26
2	Ufford, Schoolhouse	Muskoka Centre (eve)	"	26
3	Raymond, Orange hall	Muskoka Centre (eve)	"	27
4	Utterson, Town hall	Muskoka Centre	"	28
4a	Parkersville, Hall (W. Inst. only)	Muskoka Centre (aft)	"	28
5	Allansville, Union hall	Muskoka Centre	"	29
6	Aspdin, Clifton hall	Muskoka North	"	31
7	Ashworth, Stisted Township hall	Muskoka North	June	1
8	Ravenscliffe, Patron hall	Muskoka North	"	2
9	Huntsville	Muskoka North	"	3
10	Brunel, No. 5 Schoolhouse	Muskoka North	"	4
11	Birkendale, The Hemlock	Muskoka North	"	5
12	Hillside, Schoolhouse	Muskoka North	"	7
13	Novar, Cowan's hall	Muskoka North	"	8
14	Emsdale, Agri. hall	Parry Sound East	"	9
15	Doe Lake, Schoolhouse	Parry Sound East	"	10
16	Midlothian, Schoolhouse	Parry Sound East	"	11
17	Magnetawan, Orange hall	Parry Sound East	"	12
18	Burk's Falls, Sharp's hall	Parry Sound East	"	14
19	Sundridge, Orange hall	Parry Sound East	"	15
20	South River, Vincent's hall	Parry Sound East	"	16
21	Powassan, Stewart's hall	Parry Sound East	"	17
22	Trout Creek, Trussler's hall,	Parry Sound East	"	18
23	Granite Hill, Schoolhouse	Parry Sound East	"	19
24	Golden Valley, Schoolhouse	Parry Sound East	"	21
25	Loring, Russell hall	Parry Sound East	"	22
26	Arnstein, Schoolhouse	Parry Sound East	"	23
27	New Liskeard, Orange hall	Temiscamingue	"	25
28	Hillview, Schoolhouse	Temiscamingue	"	26
29	Milberta, Newton's hall	Temiscamingue	"	28
30	Uno Park, Schoolhouse	Temiscamingue	"	29
31	Hanbury, Schoolhonse	Temiscamingue	"	30
32	Charlton	Temiscamingue	July	2
33	Englehart	Temiscamingue	"	3
34	Heaslip's Schoolhouse	Temiscamingue	"	5
35	Tomstown	Temiscamingue	"	6
36	Hilliardtown, Schoolhouse	Temiscamingue	"	7
37	Haileybury, Orange hall	Temiscamingue	"	8

Division 13.

Speakers:—Mr. W. F. Kydd, Simcoe, Ont:—Subjects "Am I Raising the Most Profitable Horse?" "The Dairy Cow, Her Summer and Winter Care." "Potato Growing." "Cultivation and Rotation of Crops." "Farmer's Fruit Garden." Eve. "Dropped Stitches."

Miss Laura Rose, Guelph, Ont.

1	Little Current (W. Inst. only)	East Manitoulin	May	26
2	Sheguindah, Schoolhouse (W. Inst. only)	East Manitoulin	"	27
3	Green Bay, Schoolhouse	East Manitoulin	"	28
4	Manitowaning, Agri. hall	East Manitoulin	"	29
5	Hilly Grove, Schoolhouse	East Manitoulin	"	31
6	South Bay, Schoolhouse (W. Inst. only)	East Manitoulin	June	1
7	Tehkummah, Schoolhouse	East Manitoulin	"	2
8	Big Lake	East Manitoulin	"	3
9	Mindemoya, Schoolhouse	East Manitoulin	"	4
10	Carnarvon, No. 2 Schoolhouse	East Manitoulin	"	5
11	Grimesthorpe, Schoolhouse	West Manitoulin	"	7
12	Billings, No. 2 Schoolhouse	West Manitoulin	"	8
13	Gordon's Schoolhouse, No. 4	West Manitoulin	"	9
14	Barrie Island, Schoolhouse	West Manitoulin	"	10

Division 13.—Continued.

15	Poplar, Schoolhouse	West Manitoulin	June	11
16	Silver Water, Forester's hall	West Manitoulin	"	12
17	Marksville, Town hall	St. Joseph Island	"	15
18	Kaskawan, Schoolhouse	St. Joseph Island (aft)	"	16
19	Stone Schoolhouse	St. Joseph Island (eve)	"	16
20	Carterton, Jocelyn Town hall	St. Joseph Island	"	17
21	Kentvale, Orange hall	St. Joseph Island	"	18
22	Richard's Landing, Town hall	St. Joseph Island	"	19
23	Thessalon	East Algoma	"	22
24	Alma Heights, Schoolhouse	East Algoma	"	23
25	Livingstone's Creek, Schoolhouse	East Algoma	"	24
26	Sowerby, Maccabee's hall	East Algoma	"	25
27	Blind River	East Algoma	"	26
28	Wallford	East Algoma	"	28
29	Warren, Orange hall	Sturgeon Falls	"	29
30	Four Mile Lake	Nipissing (aft)	"	30
31	Widdifield, Hall	Nipissing (eve)	"	30
32	Woodlands, Schoolhouse	Nipissing	July	1
33	Chisholm, The Orange hall	Nipissing	"	2
34	Rutherglen, Schoolhouse	Nipissing	"	3
35	Calvin, Town hall	Nipissing	"	5
36	Mattawa, Town hall	Nipissing	"	6

Division 14

Speakers:—Mr. Edwards Jeffs, Bond Head, Ont:—Subjects "General Cultivation and Rotation," "Winter and Summer Feeding of Live Stock," "Improvement of our Herds and Flocks," "Importance of Good Seed," "The Growing of Lucerne and other Clovers," "Economy," "Education of Farmers' Sons."

Miss B. D Cleland, Newmarket, Ont.

1	Gordon Lake, Orange hall	North Shore Algoma	May	26
2	Desbarats, Orange hall	North Shore Algoma	"	27
3	McLennan, Maccabees hall	North Shore Algoma	"	28
4	Lidstone School, Laird Township	North Shore Algoma (morning)	"	29
5	Bar River, Orange hall	North Shore Algoma	"	29
6	Sylvan Valley, Orange hall	North Shore Algoma	"	31
7	Echo Bay, Orange hall	North Shore Algoma	June	1
8	Tarentorus, Schoolhouse	Centre Algoma	"	2
9	Goulais Bay, Schoolhouse	Centre Algoma	"	3
10	East Korah, Schoolhouse	Centre Algoma	"	4
11	West Korah, Schoolhouse	Centre Algoma	"	5
12	Base Line, Schoolhouse	Centre Algoma	"	7
13	Paipoonge, Farmers' Institute hall	Thunder Bay	"	10
14	Nolalu, Schoolhouse	Thunder Bay	"	11
15	Hymers, Orange hall	Thunder Bay	"	12
16	South Gillies, Mr. Couch's store	Thunder Bay	"	14
17	O'Connor, Winslow's Schoolhouse	Thunder Bay	"	15
18	Conmee, Mr. Donald Tory's Residence	Thunder Bay	"	16
19	Murillo, Township hall	Thunder Bay	"	17
20	Ouimet, Schoolhouse No. 2	Thunder Bay	"	18
21	Dorion, Wolf River Baptist church	Thunder Bay	"	19
22	Dryden, Hutchinson's hall	Wabigoon	"	21
23	Oxdrift, Schoolhouse	Wabigoon	"	22
24	Minnitaki, P. O. Billings	Wabigoon	"	23
25	Eagle River, Schoolhouse	Wabigoon	"	24
26	Sleeman's, A. J. Hunter's	Rainy River	"	28
27	Stratton, Forester's hall	Rainy River	"	29
28	Klondike, McKenzie's Schoolhouse	Rainy River	"	30
29	Barwick, Weston's hall	Rainy River (annual)	July	1
30	Black Hawk, Schoolhouse	Rainy River	"	2
31	Emo, McEachren's hall	Rainy River	"	3
32	Schameron's Schoolhouse	Rainy River	"	5
33	Devlin, Foresters' hall	Rainy River	"	6
34	La Valle	Rainy River	"	7
35	McCrea's house, Crozier Township	Rainy River	"	8
36	Fort Francis, Town hall (W. Inst. only)	Rainy River	"	9
37	Isherwood, Schoolhouse (F. Inst. only)	Rainy River	"	9

Division 15.

Speaker:—Miss B. Gilholm, Bright.

1	Clydesdale	Peterboro, N	June	4
2	Detlor	Hastings, N	"	5
3	Fort Stewart	Hastings, N	"	7
4	Hernon	Hastings, N	"	8
5	L'Amable	Hastings, N	"	9
6	Tory Hill	Haliburton	"	10
7	Gooderham	Haliburton	"	11
8	Irondale	Haliburton	"	12
9	Haliburton	Haliburton	"	14
10	Minden	Haliburton	"	15
11	Dalrymple	Victoria, N	"	17
12	Mount Julian, or Haultain	Peterboro' N	"	16

SPECIAL SERIES OF MEETINGS IN THE INTERESTS OF THE FRENCH RESIDENTS OF NORTHERN ONTARIO.

Speakers:—Alfred Lapointe, Verner, Ont. Subjects:—"Care and feeding of live stock"; "General cultivation"; "Dairying"; "Production of bacon hogs"; "Drainage."

Nipissing District.

1	Widdifield, Schoolhouse		June	14
2	Ferris, Schoolhouse, Astorville		"	15
3	Cheswick, Chisholm Township, Schoolhouse near church		"	16
4	Bonfield, Schoolhouse		"	17
5	Mattawa, Town hall		"	18

Sudbury District.

1	Hanmer		June	21
2	Blezard Valley		"	22
3	Sudbury		"	23
4	Azilda, Rayside Town hall		"	24
5	Chelmsford		"	25

Sturgeon Falls District.

1	Springer Township, Major Schoolhouse		June	28
2	Verner, Hall		"	29
3	St. Charles, Schoolhouse		July	2
4	Martland Township, Monette Schoolhouse		"	6
5	Cosby Township, Schoolhouse		"	7
6	Smoky Falls Township, Schoolhouse		"	13
7	Field, Gagne hall		"	14
8	Desaulnier's, Quenneville, Schoolhouse		"	15
9	River Valley, Post Office		"	16

Women's Institute Lecturers and their Subjects, 1909.

Mrs. M. L. Ashley, Londesboro. Mrs. Ashley has had four years experience as Superintendent of a Maternity Hospital and attended Institute meetings, as a representative of the Department, during the summer of 1908 and the winter of 1908-09. She has had experience in the best methods of home management, and for years has taught and addressed large gatherings. The subjects announced for Mrs. Ashley are among the most important for the members of Women's Institutes, and she presents them in a convincing and helpful manner.

SUBJECTS: "Responsibilities of mothers to daughters, and vice versa."
"The feeding and care of infants."
"The sacredness of the body."
"Simple meals—their refining influence."
"Sanitation and hygiene."
"Homemaking versus housekeeping."

Dr. Annie Backus, Aylmer. Dr. Backus brings her medical training and practice, as well as her experience in country life, and places them at the disposal of the women of the Province. She is eminently practical, ready and willing to help womankind. She has been closely identified with Institute work throughout the Province, and especially in her own riding, for seven or eight years. It is to be regretted that Dr. Backus can now devote only a very limited time to the work of the Institutes.

SUBJECTS: "Hygiene of the home and aids in nursing."
"Consumption and its prevention."
"The importance and meaning of woman's work."
"Training in the home."
"Education of girls."
"Physical and mental harm of faultfinding."
"Poultry raising."

Miss Mary Bell, St. George, Ont. Miss Bell is a graduate in domestic science of the Oread Institute and has had three years experience in Women's Institute work in Ontario. She has been engaged for the past two years in teaching domestic science in the city of Buffalo. Her extended experience and the thorough preparation which she gives her work enable her to render most acceptable service.

SUBJECTS: "Hints for home nursing"—demonstrations in bandaging.
"Ventilation, sanitation and hygiene."
"Dietaries for different classes of people."
"Use and misuse of beverages."
"Men and women of the future."

Mrs. Watson Breckon, Waterdown. Mrs. Breckon has taken a deep interest in the meetings of her local Institute and has given addresses with much acceptance at surrounding Institutes. The success of Mrs. Breckon's children in the vocations which they are following speaks volumes for the excellent home training imparted, and we can assure our Institute members that from Mrs. Breckon they will receive much help and encouragement.

SUBJECTS: "Dressmaking—cutting, fitting, sewing."
"Short cuts in home sewing and mending."
"Economical housekeeping."
"Training in the home."
"Teacher and parent"

Mrs. J. E. Brethour, Burford. Mrs. Brethour has been one of our most progressive and successful district officers, and has also given assistance to many of the Institutes surrounding Brant. She will be remembered as one who has taken part in our annual convention and her advise and suggestions will always be found helpful.

SUBJECTS: "The hurry, worry and waste of modern housekeeping."
"Simple entertaining, or the possibilities of social intercourse in the country."
"How to make the Institute a success."

Mrs. Colin Campbell, P.O. Box 296, Windsor. Mrs. Campbell is one of our most experienced Institute workers and the success attending her efforts in the production of poultry, small fruits and vegetables, places her in a position to give information and suggestions of great value to the Institute members. Her long experience as an Institute officer and lecturer enables

her to give most valuable advice and suggestions as to methods of work and conducting the Institutes.

SUBJECTS: "Canning fruits and vegetables."
"The care and uses of Milk."
"The comparison of our common foods."
"Care and feeding of young chickens and young turkeys."
"The farmer's fruit and vegetable garden."
"The education of the boy and girl who remain on the farm."
"Home and its problems."
"The housekeeper and her importance to the state."

Miss S. Campbell, Brampton. Miss Campbell is one of those speakers who leave audiences enthusiastic in pursuing definite lines of work. She has a wide range of those subjects which are most needed by the woman and girl on the farm. Her success in extending the Women's Institute throughout Peel county has been most marked, and her advice to officers should prove of great value to them in furthering the interests of the Institutes.

SUBJECTS: "The ideal home."
"Character."
"A young lady's accomplishments."
"The influence of women."
"The judicious housekeeper and homemaker."
"Home and school."
"Our Fair Dominion."
"Demonstrations in needlework."

***Miss G. Carter, 26 Nottingham Street, Guelph.** Miss Carter is a graduate in dairying and has had an opportunity of applying her scientific knowledge to practical dairying. She has also had the advantage of instruction at MacDonald Institute. Her list of subjects indicate the broad field covered. Miss Carter is one of our most experienced and acceptable workers and the Institutes may rest assured that service of value will be rendered.

SUBJECTS: "Food values."—Illustrated by chart.
"Value of fruits in diet, and their use in making desserts."
"Arrangements of the daily menu to lessen labor."
"Canning and preserving."
"Simple and necessary kitchen contrivances."
"Care of milk."
"The home—from different standpoints."
"The sunny side of life."
"Sewing."
"Demonstrations in cooking."

Miss B. D. Cleland, Newmarket. Miss Cleland is a normal graduate of the MacDonald Institute, Guelph, and has had extended experience in public school teaching. Her practical experience in household management, together with her scientific training, enables her to impart information in such a way that the practical housekeepers who have not had scientific training may get the greatest benefit therefrom. Miss Cleland has taken an active part in Women's Institute work in older Ontario, as well as in some sections of the north-western part of the Province.

SUBJECTS: "Value of meat in our diet."—Illustrated by chart.
"The care and uses of milk."
"Sanitation and hygiene."
"The value of a Women's Institute to a community."
"The young girl's place in the home"
"Making the best of our opportunities."
"Sweet pea culture."

Miss B. Duncan, Emery. In addition to her full course at the Hamilton School of Domestic Science some years ago, Miss Duncan has recently further qualified herself in a special course in dietetics at the MacDonald Institute, Guelph. Having had experience in both country and city life and the benefit of a number of years' work in connection with the Women's Institutes, Miss Duncan is in a position to give a practical application of her scientific knowledge, which should prove of great profit to the home makers of the Province."

SUBJECTS: "Use of food to the body."—Illustrated by chart.
"Diets suitable for different ages and occupations."
"Hints on selecting and caring for meats."
"Everyday helps for the housewife."
"Girls and their ideals."
"Country homes."
"Dollars and sense in the household."

Miss L. Duncan, Emery. Miss Duncan has been markedly successful in extending the work of the Women's Institute in West York. Her suggestions to Institute officers, as to ways and means of interesting all classes and ages and in making the meetings most helpful, will be much appreciated.

SUBJECTS: "House plants."
"Systematic housework."
"Simple home decorations."
"Ways of arousing interest in civic improvement."
"Institute work—helpful hints to officers."

Miss B. Gilholm, Bright. Miss Gilholm has been an efficient officer of the District Women's Institute of North Oxford and is able to render much assistance to officers of both district and branch Institutes. Miss Gilholm has taken the regular creamery course at the Guelph Dairy School and holds a specialist's certificate in butter making, as well as a diploma in the theory and art of butter making. Miss Gilholm's knowledge and appreciation of country life places her in a position to impart knowledge in a manner much appreciated by the members in general.

SUBJECTS: "Will the dairy cow remove the mortgage?"
"Milk, cream, soft and fancy cheese."
"Our friends and foes—bacteria."
"Institute work."
"Our ain fireside."

***Miss M. Govenlock, Seaforth, Ont.** Miss Govenlock is a graduate of the Lillian Massey School, Toronto. After teaching in the same, she took charge of the Massey-Treble School in connection with the Mount Allison College, Sackville, N.B., which position she still holds. Miss Govenlock has been an acceptable delegate at Women's Institute meetings for a number of years. She is capable, practical and interesting in her talks and demonstrations.

SUBJECTS: "Food values."—Illustrated by chart.
"Home products as food."
"The planning and serving of meals."
"Labour saving devices in the home."
"Comfort in the sick room."
"Harmony in home furnishings."
"Demonstrations in cooking."

Miss G. Gray, 650 Bathurst Street, Toronto. Miss Gray needs no introduction to the majority of Institute members in Ontario, as she has visited nearly all sections in which the work has been organized. She has, for the past two years, devoted some time to similar work in New York State. She is a thorough master of the subjects announced and presents her information in a clear, forceful and attractive manner.

SUBJECTS: "Human nutrition."—Illustrated by food chart.
"Cuts and preparation of meats."
"How to improve home conditions."
"Interior decorations of the home—illustrated."
"Life's talisman."
"Our assets."

***Miss M. Gray, 650 Bathurst Street, Toronto.** Miss M. Gray has been on the Toronto Public School staff for several years. Previous to this she taught in country schools and, with her experience in public school work and public speaking, will have much of interest for her hearers. Miss Gray is this year graduating from the Lillian Massey School of Domestic Science.

SUBJECTS: "Twenty uses for stale bread."
"What, how and when we should eat."—Illustrated by food chart.
"Mother and teacher."
"A praiseworthy ambition."
"Our investment of influence."
"Demonstrations in cooking."

***Miss N. B. Hall, Bowmanville.** Miss Hall has not only had the advantage of a full course in domestic science in the Lillian Massey School of Domestic Science, but is a school teacher of considerable experience, and will be able to present her subjects in an attractive

and forceful manner. Institute members will find much of value in her addresses and demonstrations.

SUBJECTS: "Sanitation and hygiene."
"Hints for the sick room,"—demonstrations in bandaging.
"Talk on laundry work."
"Use of food to the body."—Illustrated by food chart.
"Table service"
"Diet for the Young and Old."
"Demonstrations in cooking."

Mrs. W. J. Hunter, Brampton. Mrs. Hunter is one of our progressive Women's Institute members, and has been of great assistance as a district officer in furthering the work in Peel county. She is mistress of a fine country home, and has given addresses at a number of local Institutes, as well as the annual convention held in Guelph.

SUBJECTS: "The making of meat pies."
"Cooking meats and fowl."
"Systematic housekeeping."
"The benefits of Institute work."
"Our advantages in country life."
"A plea for the boy."
"Don't worry."

*** Miss I. Hyland, 72 St. Mary St., Toronto.** Miss Hyland has taken the full course in the Lillian Massey School of Domestic Science, which is affiliated with the University of Toronto. Miss Hyland's experience in the management of a household, together with her scientific training, will enable her to render valuable service to the Institutes.

SUBJECTS: "Food values."—Illustrated by chart.
"Table setting and serving."
"Hints on home nursing."
"Emergencies and bandaging."
"The prevention and treatment of tuberculosis."
"Household Conveniences."
"Twentieth Century Food Fads."
"Demonstrations in Cooking."

Mrs. V. G. Loree, 45 Wellington St. South, Hamilton. Mrs. Loree is a graduate nurse, and has had considerable experience in lecturing in towns and country places upon such subjects as indicated by her list.

SUBJECTS: "The care of the sick at home."
"Self control and the effect of temper."
"The training and teaching of the daughter."

Dr. Margaret McAlpine, 619 Bathurst St., Toronto. Dr. McAlpine is a practising physician of Toronto, and has had the valued experience of lecturing before a great many organizations in that city. She has also had the advantage of a post graduate course in medicine in Philadelphia.

SUBJECTS: "How to be well and happy."
"Heredity."
"Perfect womanhood."
"Work and recreation."
"Emergency treatment."
"Fresh air and tuberculosis."

Miss H. McMurchie, Harriston. Miss McMurchie is a Macdonald Institute graduate. She understands domestic economy as applied to the country home, and is highly appreciated as an Institute worker.

SUBJECTS: "Food values."—Illustrated by chart.
"Home hints on home dressmaking."
"Table setting and serving."—Illustrated.
"The planning and remodelling of farm houses."—Illustrated.
"Books in the home."
"The value of pictures."—Illustrated.

Dr. Helen MacMurchy, 133 Bloor St. E., Toronto. Dr. MacMurchy's professional duties prevent her from devoting much time to Women's Institutes. However, the limited time which she gives is much appreciated by the Department and by the Institute

members. Her addresses are pointed, full of enthusiasm, and always adapted to the needs of the locality visited.

SUBJECTS: "Home Hygiene."
"Home Nursing."
"The health of women and girls."
"The education of girls."
"Accidents and emergencies."
"Nervous prostration."
"Disease germs."
"Tuberculosis."
"The day's work."

Miss B. Millar, Box 91, Guelph. Miss Millar is one of our most experienced workers, having attended meetings in practically all sections of Ontario, also in New York State. She took charge of a travelling dairy school in Nova Scotia for several seasons. She is able to give instruction upon all lines of general work in which the home-maker is interested. Miss Millar's special training in home nursing and emergencies places her in a position to give valuable instruction along this line."

SUBJECTS: "Hints for the home nurse."—Demonstated.
"Composition, care and creaming of milk."
"Farm buttermaking."
"Difficult churning and defects in butter."
"Home and school."
"As others see us."
"What money cannot buy."

Miss M. V. Powell, Box 453, Whitby. Miss Powell is a practical housekeeper, and has kept in close touch and sympathy with home life in the country. Her experience in addressing meetings enables her to impart her knowledge in an interesting and helpful manner. Miss Powell is an active member of the Women's Institute.

SUBJECT: "Value of cheerfulness."
"Refinement in the home."
"Demonstrations in needlework."
"Character building."
"Canada, our home."

Miss Lulu Reynolds, 754 Gerrard St. E., Toronto. Miss Reynolds has had extended experience as secretary of the East York Women's Institute. She has also assisted her father in his work as secretary of the Farmers' Institute. Her extended experience places her in a position to be of much assistance to Institute officers wherever she may attend meetings. She is a most enthusiastic worker, and her addresses are well received.

SUBJECTS: "Foods; their different constituents."—Illustrated by chart.
"Horticulture."
"Character building."
"How to make the Institute a success."

Miss Isobel Rife, Hespeler. Miss Rife brings her extensive public school experience as an asset into the Women's Institute work. She is skilful in imparting instruction and in its application. Her lectures are practical and delivered in a pleasing manner. She is well qualified to advise officers as to the extension and operation of Institute work.

SUBJECTS: "Institute Pointers."
"Sunshine, Pure Air and the Bath."
"Education of our Young People."
"The Home in its Attitude to the School."
"The Hygeine of Cheerfulness."

Miss Laura Rose, Guelph. Miss Rose needs no introduction to the Women's Institutes of Ontario. Her ability as a public speaker and her wide knowledge of affairs place her in a position to render the best services to the Institutes. She has charge of the Home Dairy Department of the Agricultural College, and has instructed many farmers' sons and daughters in the art of butter-making. Miss Rose has travelled from the Atlantic to the Pacific in connection with Institute and other instruction work along home-making and dairy lines.

SUBJECTS: "How to increase dairy profits."
"Butter making on the farm—it's difficulties and how to overcome them."
"What Milk is and how it should be cared for"
"A talk to housekeepers on housekeeping."
"The making of bread and buns."
"The influence of environment."
"The head, the hand, the heart—the tripod of successful work."
"One eye in the field and the other in the town."

Dr. Annie Ross, Macdonald Institute, Guelph. Dr. Ross is a member of the staff of Macdonald Institute, Guelph, and Institute members will find her a natural teacher who will be able to impart many important truths, regarding the subjects indicated, in an attractive and forceful manner.

SUBJECTS: "The infectious diseases of children."
"How to treat emergencies."
"Sick Room hints."
"The Physiology of the Digestive System."
"How thought may influence health."

Mrs. Thos. Shaw, Hespeler. Mrs. Shaw has been an enthusiastic worker in the Women's Institutes of South Waterloo. Her practical experience and tact insure addresses of value and interest.

SUBJECTS: "Beneficial suggestions to branch institutes"
"Is it worth while?"
"Some things women should know."
"Some advantages of a country home."

Miss L. Shuttleworth, 7 Chicora Ave., Toronto. Miss Shuttleworth has had broad experience in household management and in dairy work, and these, with her clear insight into her subjects, qualify her as an Institute speaker of great resource and place her in a position to be of special service to Institute members. She has given instruction in dairy school and travelling dairies in Ontario and Nova Scotia.

SUBJECTS: "Cool dishes for summer use."
"Fruits—methods of canning, preserving, etc."
"Health—the basis of womanly beauty."
"Short talks and discussions on cream separators, dairy utensils and their care, churning, care of milk and cream."
"The needs of the dairy industry."
"The value of an effort."
"Home influence."

Miss Jennie Smillie, Sheffield. Miss Smillie completes her medical course at the University of Toronto this year. Her medical training, together with her experience of several years as a public school teacher in country places, qualifies her to render service which should be much prized by the Institutes.

SUBJECTS: "Prevention and treatment of Tuberculosis."
"Home nursing."
"Personal hygiene and health in the home."
"Disease germs."

Mrs. F. W. Watts, Clinton. Mrs. Watts has proved herself an efficient officer as district secretary of the West Huron Women's Institute. She has had experience in Institute work and uses great care in the preparation of her subject matter and her services should prove acceptable to the Institutes visited.

SUBJECTS: "Home nursing—demonstrated."
"The bath, fresh air and exercise."
"What mothers and daughters should know and remember."
"The benefits of Women's Institutes."
"Happiness in the home."

Mrs. W. Woelard, Forest. Mrs. Woelard has taken a deep interest in Women's Institute work in Forest and has materially assisted in the extension of the work throughout Lambton County. She is intensely interested in all matters which pertain to the home, and her addresses have been much appreciated We can assure Institute officers and members that Mrs. Woelard will have messages which will be of benefit.

SUBJECTS: "Poultry Raising as a business for Women."
"Demonstrating the art of needlework."
"Health and Beauty."
"Canning Fruits."
"The Home."

Miss Mary Yates, O. A. C., Guelph. Miss Yates lends to her lectures the charm of the English gentlewomen. She is a certified poultry expert, a late instructor of Studley Agricultural College, Warwickshire, England, and has also had experience in the business management of a poultry farm. Her services at the Poultry Institutes conducted by the Department

in 1907 and 1908 were much appreciated. She is prepared to give practical demonstrations as indicated below.

SUBJECTS: "The Management of Poultry."
"Winter Egg Production."
"Table Poultry."
"Chickens as Gardeners."
"Home Economics."
"Our Servants—Earth, Air and Water."
"Flower Borders without much trouble, and House Plants."
"Problems of the Home—Financial training, etc."
"The effect of Co-operation upon the community."

DEMONSTRATIONS.

Requirements.

a. A substantial table, not too high.
b. A dozen newspapers.
c. A cloth and a pail of water.
d. A pail for refuse.

1. Killing, Plucking and Shaping for Market. Requirements :—Live bird that has been fasted at least 24 hours at time of demonstration and a good sized receptacle for feathers.

2. Trussing for Table. Requirements :—A bird that has been killed after fasting 24 hours. It should be dry picked and the head and feet should be left on. It should be cold at time of Demonstration but should not have been killed more than a few days.

3. Boning. Requirements :—A bird that has been killed 24 hours and then dry picked.

4. Carving. Requirements :—A whole cooked bird and a sharp carving knife and fork.

FOURTH ANNUAL REPORT

OF THE

POULTRY INSTITUTE

OF THE

PROVINCE OF ONTARIO

1909.

(PUBLISHED BY THE ONTARIO DEPARTMENT OF AGRICULTURE, TORONTO)

PRINTED BY ORDER OF

THE LEGISLATIVE ASSEMBLY OF ONTARIO

TORONTO:
Printed and Published by L. K. CAMERON, Printer to the King's Most Excellent Majesty
1909.

WARWICK BRO'S & RUTTER, Limited, Printers,
TORONTO.

To the Honourable JOHN MORISON GIBSON, K.C., LL.D., *etc., etc., etc.*,
Lieutenant-Governor of the Province of Ontario.

MAY IT PLEASE YOUR HONOUR:

I have the honour to present herewith for the consideration of Your Honour the Report of the Poultry Institute for 1909.

Respectfully submitted,

JAMES S. DUFF,
Minister of Agriculture.

TORONTO, 1909.

CONTENTS.

	Page.
Methods of Trussing and Packing Chickens for Market: Miss Yeates	5
Address: G. C. Creelman, B.S.A., M.S	15
Illustrated Address: T. F. McGrew	20
"Liver Disease" and "White Diarrhœ": Dr. Geo. Byron Morse	21
Poultry in Eastern Counties: Victor Fortier	35
Profitable Poultry Farms: C. K. Graham	44
Illustrated Address: C. K. Graham	52
Address: G. A. Putnam	54
Raising Chickens: Wilbur Bennett	60
Poultry Raising: L. A. Martin	64
How to Succeed With Poultry: T. F. McGrew	68
Poultry Raising: L. H. Baldwin	77
Illustrated Address: Dr. G. B. Morse	81

Poultry Institute.

The annual meeting of the Poultry Institute and the Ontario Branch of the American Poultry Association was held at the Ontario Agricultural College, Guelph, on the 8th, 9th, 10th and 11th of February, 1909.

Mr. L. H. Baldwin, of Toronto, occupied the chair at all the meetings, which were started promptly on time, and the meetings were characterized by general discussion on every subject that was presented. There was a larger attendance than at any previous meeting of the Poultry Institute. At the first meeting, standing room only was available for some who came in a few minutes late. In opening the meeting the chairman said: "I do not know that it is necessary for me to open your Poultry Institute with any lengthy remarks. We have had two or three years' experience in Poultry Institutes and we know the practical good we can get from them. We have not started our meetings in former years promptly on time, but during this week I intend to open our meetings at the advertised hour. We all appreciate the great work Professor Graham has done in getting the speakers together, that he has on the program for this occasion. These speakers have come 'chuck full' of information, and it is the duty of the audience to get all the information these gentlemen have out of them. They will tell you a great deal in their addresses, but there is a good deal more that they can tell you if you will only ask questions. Therefore, I would advise you to be ready with your questions as soon as the speaker is through.

METHODS OF TRUSSING AND PACKING CHICKENS FOR MARKET.

By Miss Yates, O.A.C., Guelph.

I would like to say a few words to you about table poultry generally, before taking up the demonstration work. It may seem a little unkind, and I hope it will not bore you at an exhibition of live birds, to say something of what is below the feathers. It has been a disappointment to me not to find better birds to eat in this country. In the Old Country a very fine quality of birds is exhibited at the big shows, such as the Smithfield Fat Stock Show and the Dairy Show, not forgetting big local shows in the counties. In Canada you seem to pay more attention to eggs and laying strains, but the culls from laying yards and the sweepings of the fancier's loft can never be marketed as high class table poultry. Here in the city of Guelph, where there is such an admirable show of dead poultry, it is hard to realize that throughout the Province poor stock is put on the market, and in bad shape too. It seems to me that it is not generally understood that all birds will not make good eating. Just think of the different types shown in the human races, and you will realize something of what I mean. In this country many people are a prey to nervousness and indigestion, and we see numbers of lean, active, individuals walking about. Canadians might

almost be compared to the Arabians and other active nations of the world. Then recall the appearance of the comfortable, stout Germans, and the fat fleshy Englishmen, and don't you agree with me that they would make rather better eating than the average Canadian, if you had to eat human beings? (Laughter and applause.) Of course, I am well aware of the jokes you get off on the "greedy Englishman," but it is a fact that some races are plumper than others. We see the same thing in the different races of cattle: some will put on flesh more readily than others. In speaking in the beef district the beef men understand what I mean, but the dairymen do not apply the information so readily.

In poultry we get first of all the laying or non-sitting varieties, and these are the birds out of which you cannot make the best table meat. They are lean, active birds, and they give a good many eggs a year, but they do not put on the quantity of breast meat. Those who cater for export trade should know that most of the European nations like the white meat better that the dark meat. In Canada frequently people ask for the dark meat. In Europe, however, delicate, well-flavored breast meat, is required, and a bird is judged by the quality and quantity of muscle on the breast, so that when you ship great consignments of yellow fleshed, skinny breasted birds to the old country, you are likely to get very poor results.

The second great group represents table birds. The Dorking is possibly the ideal we should try to aim for, but it is not a very easy bird to raise under all circumstances, as it does not do well on damp soil or clay. The type I am alluding to, has the square shape, which gives good development on the breast. The next five names on the chart are French; in France probably the finest table poultry in the world is produced, and the older French races are some of the most valuable there are for that purpose; but I do not advise you to take them up here. La Bresse and La Fleche are very delicate eating, but they require a warmer climate. Some specimens realize for the French poultry women, five dollars apiece, where specially fed and fattened for the tables of Russian Princes.

I have been able to get Faverolles ready for the market in eight weeks. They are the race of birds that the French use to supply the demand for their second rate market and should be better known. They have the beautiful breast of the English Dorking and all the hardiness of the Rhode Island Red. It is a disappointment to me that that bird is not more largely used in this country by those supplying the general demand for table fowls. They do not lay many eggs in a year, but the point I wish to make is this, that in order to obtain the best results you have got to specialize. If you are going to put a quantity of table poultry on the market you must use a table breed.

Start Right. To get the best results, you must start right. Having selected the race, you must remember that table birds require different treatment from the beginning. You must give them less exercise and more generous diet. I do not know of a better use to which you can put your table scraps than in feeding them to birds for table use. The wastage from your meals will give excellent results. I remember some years ago, one of the big exhibitors of table poultry came to see me at Lady Warwick's College, and just as he came along, a couple of students passed with two buckets from the college kitchen. We put the cooked material into one bucket and the uncooked into another. The visitor asked, "Is that what you are going to give to your show chickens?" And I said, "Yes, it is," He said, "Then it is no use trying to compete against you." As a matter of fact, fed aright,

it is the best kind of food you can give table poultry, if it can be got in large quantities from some hotel or institution. Ordinarily it is hard for the women to get this material for the chickens, because it generally goes to the pigs.

I advise marketing the cockerels early; do not keep them. Get rid of them before Christmas at latest. Many of you market the whole of your stuff in the fall for the Thanksgiving trade, and this is not the very best plan, especially if you are going to work up a special trade. There is a tremendous demand here for good poultry and a good trade can easily be worked up. Your customers must be supplied with what they want during the whole year, and in order to meet that demand all the year round, there must be two or three breeding seasons and some broilers must be raised. These are easily managed and do not require very much different treatment. For your later table chickens, give them two mashes a day from your house scraps in addition to their hopper food and you will find they will get along uncommonly well. I have had the pleasure of helping Miss Beardmore to market broilers for the Toronto Horse Show for two years now, and we were lucky enough to get a dollar apiece for them the first week in May. They must be small, but as plump as partridges, fed in the ordinary way, with two good mashes of bread and milk or house scraps, a day; they were marketed at eight weeks old. When the Horse Show and the races come off in Toronto, there are a great many parties given, and people are of course glad to have dainties to give their guests. There are many people in the rapidly growing cities of this Province who require delicacies for ordinary use, and one does not need to look far for a good market. There is an excellent market springing up in the Province of Ontario, and the home market is the easiest one for an ordinary person to supply.

Fleshing or Fattening. We were marketing buff Orpingtons and white Wyandottes as broilers. They do not make the best, but the people were glad to have them. Wheat is a good thing to feed table poultry. The lowest prices are obtained in September, October, and November. The highest price is got in May. If you once establish a reputation for supplying excellent poultry, you will be sought for by first-class hotels, clubs, and private hospitals, and my experience is that they will take all the stuff you can supply. For the spring trade and the early summer months you can secure higher prices from private customers. The French method of feeding is to be preferred for birds in confinement. Ordinarily, they must be supplied with vegetable food of some sort, but if sour milk is used this can be dispensed with. The acid in the milk answers the same purpose as the vegetable acid and keeps the birds in good health. Let the milk sour, then mix your meal into the milk in the proportion of one quart of milk to one quart of meal and let it stand for twenty-four hours to become a creamy, rich consistency. Three-quarters of a pound of fat can be added to a gallon of skim milk, gradually raising the amount to a pound per gallon. In France the milk is bought when it is cheap and stored in pits in the ground until it is required. It does not matter how sour it gets.

Put the birds into crates or coops, and don't give them anything to eat for twenty-four hours. The whole secret of success consists in keeping the birds' appetite keen from the beginning. A teaspoonful of food too much will spoil them. There is an instinct about feeding animals; some people have it by nature, others you can never teach; exactly as there are some women who never learn how to feed their husbands, and some who never make a mistake in cooking. The feeder must understand when the food is

right and the birds are enjoying it. We give a quart for eight large cockerels. They get that amount twice a day, the first week morning and evening. It is well to keep the feeding times evenly balanced apart. The birds must be kept quiet and do not allow strangers to be around them; in fact keep all dogs, children, and visitors away. Induce a sleepy, comfortable condition. Do not let them see too much of what is going on around them; do all necessary work at feeding times, take out the birds that are to be killed and clean out the shed then. It is well to darken the shed; keep it shady, cool and quiet. The second week give the birds as much as they will eat and the third week put them on the cramming machine. It is advisable to use a machine, divide the period of 20 days in half, and see that they are kept ten days on the low diet and the other ten days have the full rations. The birds should be killed as soon as they are ready; do not let them go past a certain stage, or you will find it is not economical. There is no difficulty in this business; it can be started at any place, where birds of the right breed are raised. It is a very good plan to induce the neighbors to co-operate and have the birds bred in the same way. I have heard it stated from this platform that it would be a good idea to have a whole neighborhood co-operate in raising Plymoth Rocks for example, and there would be a chance in this way to market an even product and take big orders for wholesale trade. Big buyers can only place orders in such neighborhoods. Birds should be killed where they have been fattened, and they should be fasted for twenty-four hours at least, before being killed.

Fasting Before Killing. These birds before you here have been properly fasted. Notice the flat appearance of the neck. It makes all the difference in the world to the quality of table poultry, if the birds have been fasted until the crop is emptied. I cannot possibly lay too much stress on that. It is positively a revolting sight to go to the poulterers' windows in nearly every town or village in this country and see a number of the birds with the crop distended with food. That is an indication that the whole of the alimentary canal is full of partially digested food, which will become decomposed and give off gases which will set up toxins that affect the quality of the flesh. In fact it has been stated by some authorities that we often market poisonous stuff. A great many producers say, "But then, we lose perhaps three-quarters of a pound of weight if we fast them," This reasoning will never built up a high class business or obtain the best prices for the produce.

Marketing. People tell me that there is a great deal of difficulty in marketing table poultry in the summer months in this country, but I have never had a complaint from any customer, of the state in which the birds have arrived. At one time last year we were shipping as many as six dozen a day, and they all arrived in good shape, because they were fasted at least 30 hours—36 hours even—is none too long in very hot weather. Then if they are killed, plucked, and packed in a cool place, they will arrive all right. We had no special place for doing the work; a cool cellar, was in our opinion, all that was necessary.

Shipping. Then sometimes I hear complaints of the abominable state of the railroad cars, but there is no particular hardship in shipping in this country any more than in the old country. I believe it is because attention is not paid to the fasting before killing and in packing in a cool place that so much loss occurs. Ship if possible by an early morning train.

Now, before I begin to demonstrate, trussing, etc., if there are any questions, I will be pleased to answer them.

The CHAIRMAN: You were speaking about these table breeds; could you tell us anything about their laying qualities?

A.—The Faverolle I mentioned as being particularly admirable for eating, is a shockingly poor layer in most strains I have used, and it lays a wheaten colored egg.

Q.—How about the Dorkings?

A.—They lay a nice looking white egg, but I have never had Dorkings that would lay well in winter.

Q.—Indian Game?

A.—They are not prolific layers. What do you mean by good layers?

The CHAIRMAN: If you have a flock that will average 130 to 140 eggs per annum you have a good laying strain.

Q.—In getting scraps from hotels, is there, first of all, any difficulty in getting the hotel people to treat them properly, and what do you do with the scraps to keep them from getting sour?

A.—Wherever I have been able to get hold of the right kind of material, I have had no difficulty in getting them to classify the material.

Q.—Where I have gotten material from the hotels, everything has been all mixed up. I was liable to get Sapolio. When I did get the stuff it would be sour, and I let it all go to the hogs.

A.—Your experience has not been quite as satisfactory as my partner's. We used to sell our best broilers to one particular club, from which we had the scraps, and most of the broilers used to come back in the scraps. They were entertaining society people who have a few mouthfuls of each course and leave the rest. We found it was uncommon good fare for the chicks.

Prof. GRAHAM: Could you get the people to separate the scraps for you?

A.—In this particular instance they were not specially separated, but in another instance, they gave a man 25 cents to take away the scraps, and I made a bargain with the manager, that we would send for it, if certain things were kept out of it.

Q.—What would your seven weeks' old Faverolles weigh?

A.—As broilers, we like them to weigh three pounds a pair, and we allow a margin of a quarter of a pound, and sometimes they weigh three and a quarter pounds a pair.

Q.—Do you make them weigh that at seven weeks?

A.—Yes, you can do that. You must not make that weight up of bone and skin, either. You can get that weight fairly easily in a rapidly growing bird, but you must try and make it up with flesh.

Q.—How many eggs do you get on an average with your Faverolles?

A.—95 to 100.

Mr. FORTIER: We get 90 to 95. They will lay in cool weather, and they will stand the cold pretty well.

Q.—What kind of meal do you mix with that sour milk?

A.—The best meal I know of is whole oats ground up, if you can get it ground fine enough in this country, hull and kernel. I have used barley meal, corn, and shorts with a cup of low grade flour to bind the mixture.

Q.—What would you do in the United States if you had to have yellow meat and trust to corn meal?

A.—Why, do you not use corn meal? We always put with it low grade flour. It might interest some of you to know how these broilers were fed. They were given nothing at all for the first forty-eight hours; then they were given a feed of grit.

Q.—What grade of grit?

A.—Sharp flint grit; then a mixture of cracked wheat and pinhead oatmeal. That is the cheapest thing I know. You can buy all kinds of beautifully prepared chicken food, but if you can get a little grinder and crack the corn up yourself and sift the flour out of it, that is cheaper. A hopper of beef scrap is before them all the time, and I do not find much difference whether it is wet or dry. I have a small piece of wood with a long nail in it, and I put an apple on the nail and the chicks pick at it. It does not matter if the apple is a little bit rotten.

Q.—Sour or sweet?

A.—An ordinary apple. At the end of the first week, they had two mashes per day. If you can give them warm bread and milk, it answers admirably. We feed these mashes at ten in the morning and four in the afternoon. If you give them table scrap, the cooked material should be dried off with meal. The girls present will understand when I tell them to put their hands into it and mix it up. Do not use barley meal unless it has been sifted. Ground oats will bring them on quicker.

Q.—Do you sift the corn meal and the barley meal?

A.—Sift barley meal; all that extremely husky stuff should be taken out for chicks three weeks old.

Q.—How about the flour meal that you get at the mills that is made from oatmeal?

A.—I do not like that; it makes it too pasty.

Q.—Do you have anything else besides that mash?

A.—If you can give them milk with it, all the better.

Q.—How old are they when they start upon that diet?

A.—Three weeks.

Q.—Do you continue that without any change?

A.—Yes.

Q.—These chicks have a limited range?

A.—Yes.

Q.—How close can you keep them without getting weak legs?

A.—If they are on loose dry litter, they will get a certain amount of exercise. Keep them actively scratching for some of the food. Of course you must not take birds raised upon table poultry methods and try to turn them into stock birds. I am not advising the system for any other purpose but a broiler trade, because their constitutions would be considerably impaired if kept in this way until adult stage was reached.

Q.—What is this Dari meal used in England?

A.—Kaffir corn.

Demonstration in Carving.

Miss Yates then gave an demonstration in carving a cooked bird. In doing so, she said:

Great pains have been taken in cooking that bird to get this attractive appearance. Half the beauty of the bird is lost if it is carved in the kitchen, and so often I have seen a tired woman, who has done all the cooking for a big family, have to set to work and carve the bird before it came to the table.

Put your fork in firmly, rather more than half way down the breast bone, and keep it there till you are pretty well through carving. Take off the wings, then take off what we call the "merry thought" and what you call here the "wish bone." Take off the side bones next, and then remove

the breast. The breast is the chief dainty on the bird and should be given to the guest of honor. If the breast does not easily yield, make a cross cut each side through the ribs. You can take two or three slices from the side of the breast if you wish; otherwise you should give it to anyone as it is.

Q.—Supposing the guest thinks the breast meat too dry?

A.—In the old country, they always give the white meat to guests and dark meat is generally used in the kitchen.

Prof. Graham: It is on account of their not feeding milk here that the breast is sometimes dry.

The back should never be given to anybody. I am supposing you are entertaining a party of people whom you wish to honor. You should not give the drum-stick either unless you are obliged to do so. It is not a choice piece to give anybody, but for an ordinary family gathering, I think the boys might get it. If you are obliged to give some dark meat this first joint of the leg, may be used. In the old country as a rule these pieces of the bird would be reserved and grilled for breakfast. They would not be served up at the party at all.

Q.—Would it be considered good form to stand while carving at a dinner?

A.—No, you would have them carved on the side.

Q.—Supposing this were a grand function, and the carving was being done at the table, would you stand?

A.—If the hostess were a lady and she were doing the carving, I have seen it done standing.

Q.—What is the most necessary thing in carving?

A.—I should say patience and an unselfish disposition, that would enable you to give the best pieces to the other people.

Trussing.

See what a nice breast this bird has. I do not think it will make tough eating.

It is a good thing, first of all, to remove the sinews from the legs, and then these drum-sticks, that we have been talking about, do not present such a great problem to those who are going to eat them. I am supposing the bird has been singed. If you singe them before shipping use methylated spirits, do not use straw or paper, the flame from which is apt to smoke the flesh. Pass the bird through the flame once each way to get rid of these rudimentary feathers which look so much like hairs.

Q.—Do these show on a yearling?

A.—Yes, they will show.

Q.—How old is a fowl if they do not show?

A.—We do not like to eat them very old. It is customary in some markets to leave a little ruff of feathers around the leg, and that has to be removed before you fix the bird for the table. It is also customary to leave on some wing feathers but in these days of difficulty in getting good servants, it will pay you to prepare the birds before shipping to private customers, and if you do so, the giblets should be put in a piece of butter paper and the birds should be wrapped separately in butter paper and then placed in a basket, and they will travel any distance easily.

In order to take out the sinews, have the head of the bird towards you, make a slit down the sides, insert the trussing needle and twist it around several times, and pull hard, as you would in drawing a cork. The older you think a bird is, the more you should twist upon the needle, and

then pull as hard as you can. The removal of these tough sinews makes it considerably better eating.

You should have a knife with a strong blade that will not give. Take off, first of all, the wing tips. Also remove the flap of skin, that supports the quill feathers. It is not a nice thing to get upon your plate, and it should be trimmed off at this stage in the proceedings.

The next thing to be done is to take out the neck. Reverse the bird, make a cross cut just at the point where the feathers cease. Make a narrow slit right down the back of the neck of the bird, until you expose these two white marks, at which point the neck will come off more easily than any other.

The neck is a useful part of the bird from which to make gravy. But it should never appear on the bird at the table. In the method of killing that I adopt (by dislocating the neck) the neck would draw right off because I should have snapped it to begin with, but in your method of killing (bled) you have to make another cross cut to get the neck out.

I am now going to remove the crop. To do so begin by inserting the thumb at the end of the flap of skin, do not begin at the crop itself. Above all things get all the crop out. It is the most disagreeable thing in the world to get an oat or two on your plate.

The next thing is to loosen the lungs, and if you do that thoroughly from the neck end, you will find it will be considerably easier to draw the intestines. Allow your middle finger to clear off the material below the lungs until you can feel the ribs. Insert your middle finger below the breast-bone and work the bird gradually around until you feel a spongy substance below your finger. Then hook the fingers in it and draw it out smartly. Make a cross cut between the vent and the tail, and draw out the end of the trail. This bird is singularly fat and we can just get in the knife and cut out the end of the trail in that way. This fat will give you a better flavor for the chicken than any other kind of fat you can use for roasting. It is also very much appreciated in hospitals where they make salve out of chicken fat. It will heal sores sooner than anything else. I had an order at one time from a London Hospital for all the chicken fat I could let them have.

Put your fingers through the opening until you feel the gizzard in your hand, then pull gently but firmly, and the whole of the entrails will come out with one pull. The heart should be sent with the neck, so should the liver if it is in a fit state, and the gizzard is always sent.

Dr. Morse: You have drawn that bird in such a clean manner that I do not think there would be any tainting of the fowl's flesh from the entrails. Complaints have been made that in drawing the fowl, the flesh becomes tainted and that the taint is retained during cold storage, and results in putrefaction.

A.—For our best customers in England, it is customary to remove this wish-bone or merry-thought to enable the butler in carving to cut a continuous number of slices. It is well to crack the bone at the root of the neck.

This needle I am using is an ordinary packing needle. I do not know whether you can procure trussing needles here or not, but you can buy these packing needles at any hardware store. Introduce the point of the needle as low down as you can in the thigh, but over the bone, and let it come out in exactly the same position on the other side. Roll the bird over, take a cross position through the wings, reverse the position for the other wing and you come out opposite where you went in, then tie the string as tightly as you can. The second string is put in simply to tie the hocks down to the tail. This

string is put in through the two holes that are in the back of the bird. In the old country, if it is a spring chicken, the toes only are taken off, and the other part of the foot is left on, for an older bird we take off the foot just mid-way, and there is a reason for that. If you take off the foot at the joint, you will find that in cooking, the flesh will frequently shrink up the bone and a great piece of the bone will be exposed when the bird comes on the table. Suppose this bird is shipped to your customer trussed and the cook wishes to put in dressing, she draws out this flap of skin and the dressing is put in there to make the bird to resemble a little turkey, and the remainder of it is made into balls and put around the bird on the dish when it comes to the table.

The dressing we use is that advised by Mrs. Marshall, the famous cook in London, England, which is:—8 oz. bread crumbs that are stale and white; 4 tablespoonsful parsley chopped fine, very fine; 4 tablespoonsful sweet herbs, marjoram and thyme, no sage; 2 tablespoonsful butter or chopped bacon or fat; 4 whole eggs. Just break the eggs in whole and mix them up with the mixture; 2 tablespoonsful salt; 1 tablespoonsful black pepper. Mix all up together and use. That should be enough for two chickens.

Killing.

In case you should be afraid that the bird will not be dead because you will see a certain amount of muscular action after it has been killed, let me say the bird is dead, as soon as I snap the neck. Take hold of the neck, with the little finger placed below the beak, and snap the joint down and back at the same time and it is all over. It is a good plan to allow the wings to flap a little. That helps the passage of the blood into the neck and drains the bird as effectually as it would be drained by bleeding, and yet you get none of the disagreeable experience of seeing the blood dropping in every direction. (Miss Yates then plucked the bird.).

Mr. McGrew: The question of cold storage for poultry has been discussed all over the United States, and I say that just as soon as putting dressed poultry into storage is stopped, just so soon will the poultry interests of the United States be ruined. If the United States government would spend the time in trying to teach the people not to kill the chicken until after it has fasted for thirty hours, instead of agitating against cold storage, it would be of more benefit to the people.

There are eighty-five million of people in America, and six or eight millions in Canada, and it would be utterly impossible to keep food for these people if it was not for cold storage, and thousands and thousands of people living in New York city would not be able to get eggs. I kept a turkey three years in cold storage, and I was invited to help eat one that had been in storage for five years. I did not get there, but the five gentlemen who did, said that if they had not been told that it was in five years, they would not have known it had been in storage longer than one year. I have eaten turkeys that have been in storage sixteen or eighteen months. I would rather have the flavor of one that had just been killed, but they are good food. I think the fault is in the fowls before they get in cold storage and not after.

Miss Yates: It is peculiar thing that we have to listen to statements of that kind repeatedly in the present day, just for the lack of common sanitary precautions, which one wishes that all would practise.

Mr. McGrew: People who can pay $1 per dozen for eggs and $5 for a chicken will take care of themselves. It is the people who want cheap food

that we have to look after. The people who live in large cities and who cannot pay the big prices.

THE CHAIRMAN: After killing do you cool birds by artificial methods?

MISS YATES: No, we have only had an ordinary cellar to pack our birds. It is a well ventilated cellar; the shaping board should be in the cellar.

The birds should be packed in as cool a temperature as possible, and the best package I know of for shipping poultry is a meat basket. You can get them in many different shapes, some of them are wider than others. Put some clean paper in the bottom and sides of the basket, lay the birds on their sides. Pack them so that the breasts face each other. By packing in this way, you get a criss-cross pattern of the wing feathers all down the centre of the basket which is attractive looking. Do not have more than two layers in a basket. Then put a piece of paper on top and cover with a piece of sacking and sew down with a packing needle.

Q.—Is that basket heavy enough to hold two dozen fowl?

A.—This type of basket is.

Q.—How far do you ship them?

A.—From Jarvis, in Norfolk county, to Toronto, about 130 miles.

Q.—Is the flesh of the chicken improved by keeping it?

A.—I do not care for a chicken until a day or two after it has been killed. I consider they improve for a week at least.

Q.—Would you want to eat that chicken you have just killed, to-night?

A.—I would not. You must be careful to get all the animal heat out of the bird before you pack. If you kill a chicken and then cool it in cold water and fry it, it is all right to eat the first day.

THE CHAIRMAN: These birds you see on this shaping board have been killed and plucked by the students of the Short Course in Poultry here and you can see what they can do with very little training.

BONING. Anyone can bone a chicken. There is nothing at all difficult in doing it. It is just a question of patience and keeping at it. Take a small knife and make a slit right down the back, and proceed to scrape until you free the sinews that attach the wings to the bones. Cut these sinews and proceed to scrape, scrape, scrape, until you can get the wing bones out. Scrape the carcass until you draw the bones out in the same way. As you scrape the flesh will gradually turn over until you have the bird inside out.

Q.—How long would it take you to do that?

A.—It takes some time. I have not had occasion to do a great many, and I cannot do it within an hour. The young domestic science students that the Department sends out with me, sometime take an hour and a quarter, to an hour and a half. It is a very tedious thing to watch. That is all there is to do, scrape until you get it free.

Q.—Why did you put the liver of this bird in the pail.

A.—Because it was not fit to use. I would not use it unless it was a bright red and not too dark.

Q.—That is no cause for alarm as to condition in that chicken.

A.—It depends upon other conditions in the chicken. You have to prepare something to put in the chicken to take the place of the bones, and then it is prepared with aspic jelly and turned out in the square shape, and carve by cutting in slices, and it is astonishing the number of people you can serve with a chicken prepared in this way. If you want to try this dish, select a chicken that has not been frozen and that has an unbroken skin.

This is the mixture that is used in the Lillian Massey School in Toronto, which is now part of the Toronto University:

1½ pounds of chopped veal or you may use the flesh of another chicken or a young turkey. Sometimes in the old country, they use the tender loin of pork. It is well to use white meat. Rabbit is sometimes used. 1½ cups of white bread crumbs; 1½ teaspoonful salt; ¼ teaspoonful pepper; ½ teaspoonful sweet herbs. (We use 2 tablespoonsful); ½ teaspoonful lemon juice; 3 tablespoonsful butter; 2 whole raw eggs; ½ tablespoonful chopped parsley.

Mix in order given and use stock or cream to moisten; that will be sufficient for three and a half pounds of chicken.

Q.—Would it be cooked meat or raw?

A.—Raw, it should on no account be meat that was cooked before. Place it within the body of the bird and with a teaspoon press it right in the cavities from which you have taken the bones, and fill up the whole of the body cavity, and then with a needle and cotton sew up the bird. Shape it as well as you can and roll it in muslin and wet it and allow twenty minutes to the pound for cooking and 20 minutes over. You can steam or cook it in water or stock. In the meantime you have the bones from the carcass with the giblets and you should allow them to cook in a quart of water until you have it reduced to half the quantity and then clarify that with the white of an egg and add French Leaf gelatine, ¾ of an ounce per pint liquid. Decorate a cake tin or a bread tin in the bottom in any way you fancy with hard boiled egg cut in slices, or you can use beets or lettuce and tomatoes and then pour in half inch or so of your jelly and let it set. Then lay your chicken on the top of that and fill up with the remainder of your jelly and set it aside to cool. When you turn it out you certainly have an extremely pretty looking dish which your friends will not think you make at home.

The Chairman: I am sure we all have enjoyed immensely Miss Yates' lecture, and I know when we go home and try these things, we will want to come back the second time and see how we made so many mistakes.

Q.—What would be the proper charge for trussing?

A.—I think it is worth 5 cents for the trussing alone.

Prof. C. K. Graham: We weigh the bird before trussing it, and we charge 5 cents a pound extra for trussing a bird. One that is bled and sold in the usual way at 15 cents a pound is the same as selling a bird drawn at 20 cents a pound. Suppose a bird that was four pounds undrawn is worth 60 cents, it will weigh three pounds when drawn and should sell for 20 cents a pound to bring 60 cents. A bird loses 12½ per cent. of the live weight by bleeding and plucking.

ADDRESS.

By G. C. Creelman, B.S.A., M.S., President O.A.C., Guelph.

Again it is my privilege, and I esteem it such, to welcome back to the Ontario Agricultural College men and women who are interested particularly in the subject of poultry and poultry culture. We are hearing a great deal about it in Ontario, and they are asking us for poultry experts for other provisions of the Dominion. The States to the south have for so long been leaders in many ways in this poultry business, but we are rapidly coming to the front. I feel that it would be quite out of place to attempt to discuss the subject with you, or take up your time in giving statistics

of the poultry business on an occasion of this kind. I simply want to make you feel quite at home on the first evening of your stay with us. I want you to feel so much at home that you will not confine your whole time or observation to the poultry department, although I am sure that when we have men so interested in matters regarding poultry as Mr. Graham, you will find it pretty hard to get away for him, and I have no doubt you hardly find time for meals. I would be very glad if you would feel free to come into any of the other buildings and inspect them and learn as much as you can of what we are doing at this Institution.

Agriculture has come to occupy a place second to none in this country, and because of what has been done in agriculture the less than eight million people of this Dominion of Canada have gone to the expense and trouble of building three transcontinental roads, east and west. The country to the south of us contained forty million people before they thought they could afford to build a transcontinental road, so you see that although three transcontinental roads may not at present be able to live in this country with the population we have, yet, we believe it is an agricultural country, and that it will make rapid growth, and those who come to us from foreign shores will find comfortable homes here and will develop the country in the west. Then these continental roads will have all they can do in the days to come, and this Canada of ours will be a great country.

You will ask me "What are you doing, and what is your institution doing, and what are all these big buildings for and why are you spending $1,000,000 in buildings to educate the people of this province and of this Dominion to a proper understanding and better knowledge of this business which you say is the greatest business and which you believe is going to develop this Dominion of Canada and make it grow into a country as big and as great as the country to the south of us?" I want to tell you one or two things in connection with the work here so that you may have an intelligent idea of why the Government of the Province have started this institution and have so liberally supported it. Because of some of the work that has been done here, we find that the college has, to some extent, gotten a name abroad, and it might be interesting to you if I were just to read the headings of the correspondence which I find upon my desk after being absent from my office six hours. I went to Toronto this morning, and on my return I found that my stenographer had placed upon my desk these letters which will give you some idea of the scope of the work we are doing. The first one is from a family in Edinburgh, Scotland, asking me to kindly send a prospectus of the Guelph Agricultural College, as they have a son who is thinking of coming out to this institution. The next one is Newark, New Jersey; Glasgow, Scotland; Sarnia, Alberta, Nova Scotia Agricultural College at Truro; Dudley, England; Homestead, North-West England; one from Jerusalem, in Asia; and one from Toronto. That sort of thing gives us not only a broader scope for our work, but we know that the people are looking to us to give their boys and girls such instructions in agricultural work that they can help other countries to do better things in agriculture.

I will leave aside the work we are doing for the boy who is with us; The boy who comes to us from the farm has a practical knowledge of things. I see many of them sitting before me. They are not only practical men, but men who did things before they left home. We have men attending the College who can hardly be spared at home, and who could not come here in the fall until after the school opened; men who come here to get a knowledge of the why and wherefore of the things on the farm: Why do

this and that, and the results you get by doing such things, and how to save a certain amount of time. I am going to say a few things about what we are doing for the farmers themselves—what we are doing to help them on their own farms. If we reached all the boys who were eligible to come to us, we would yet have left out a number of young men who cannot come and the older brothers and the fathers and mothers who want to get away from a lot of things they have been doing by rule of thumb, and who want to know why Providence has sent them weed pests and poultry diseases and fungus growths on fruit and insect pests on their crops.

I have before me the names of our Faculty for 1908-09. The first name I see on the list is the Professor of Dairying. What has he been able to do for the farmers of the Province? I heard him say at a meeting three years ago, that it was a great shame that there was such a difference between the average and the possible production of the cow; the average cow gave 3,000 pounds. And in order to back up his judgment he went and bought a cow, and he produced from that cow in one year 20,778 pounds of milk, and that is what he meant when he said that the difference between the possible and the average was very great. Apply that to your own business, the difference betwen the average farmer that has poultry and the best farmer; the one man is making money and the other does not know whether he is making anything or not.

The next one is the Professor of Field Husbandry. We had a little fight between the farmer and the miller. The miller said, "We want Manitoba hard wheat that gives us the largest percentage of good flour," and Professor Zavitz said, "We cannot grow that in Ontario, but we have a variety which we call Dawson Golden Chaff and I advise our farmers to grow that." The miller said, "That is not good wheat for flour." Professor Zavitz said, "That is your look-out, and you are still paying as much for it as for the other." Then Mr. Zavitz said to himself "That is all right, but is not there some way by which we can produce as good wheat as the Turkey Red that the miller will like?" And so he crossed Dawson Golden Chaff with Turkey Red, and from that he picked the best seed and planted it again till now he has produced—he has not given it to the world and will not until he gets it established—but he tells me privately that he has got something promising that he believes will meet the wishes of both the miller and the farmer. And if he can perfect it and send it out, he will have handed his name down to posterity.

The next I see on the list is the Professor of Landscape Gardening. Professor Hutt is now prepared to go through the length and breadth of this Province with illustrations of our college greenhouses and grounds and help every rural school in the country to make better gardens and have plants, so that they can pick them up and look at the roots and see how they are growing. Teach the children something about agriculture when their time is not worth very much. Let them play at it. We believe that is good work.

The next is the Professor of Animal Husbandry, and no matter what we may do to grow better peas, oats, barley and rye, if our cattle are not right and our sheep are not right and our swine are not right, although we may raise great crops of these grains, we will not have the proper animals to feed the grain to. If we feed good grain to inferior cattle, we will not get good returns, and Professor Day is going throughout the length and breadth of this country lecturing on Animal Husbandry. He was at Carleton Place last week, at Lindsay the week before, and this morning he has gone up to Ayr. When he is not lecturing to the students here, he goes about the country and gets from thirty to three hundred farmers together,

and brings into the ring cattle, sheep and swine, and talks about them. He will say, "What do you think of that fellow,—have you got one as good as he is?" And then they thresh out the different points, and by comparison they find out what they know, and very often what they don't know, and some farmers will go home and say, "I am not going to be satisfied with a poor kind; I am going to buy a flock of sheep or a herd of cattle and I am going to take a pride in them."

The Professor of Chemistry is next. What can he do for the farmers? He told me the other day he analyzed a sample of so called bran that was all oat hulls. They had taken out the oat-meal and sold it to the Scotchmen, and then they took the hulls and ground them up and sold them to the Irish to feed their cattle. From looking at it, I could not tell whether it was ground oats or hulls or bran. Professor Harcourt said, "This must not be. We have no business to be paying for these things, and a committee was appointed at the Experimental Union to go to Ottawa and point this out, and get a law that will protect the farmer. If the President of the Agricultural College says it looks good to him, how is the ordinary farmer to tell. The Professor of Chemistry says, "I will not take any chance. I will find out for myself;" and he has the appliances and he goes to work and analyses.

Professor Dean heard that they were using boracic acid in butter, and he said to Professor Harcourt, "Find out whether that is bad or not," and he got a lot of the College boys in the dining room, and he said "What do you say to our feeding you on boracic acid?" He tried it, and they found it had no ill effects, and he doubled the dose and then increased it to twenty times as much, before it injured them, or before they said they did not care for more butter, and the result was that he was able to say to the consumer that the amount of boracic acid used in the butter would not do any injury.

Professor McCready is down as Professor of Botany or Nature Study. What is that? We have been trying to find out what is nature study. We find that the country boys and country girls are not learning anything about country things. The English school teachers came over here to get ideas of our schools and they said to us, "What are you doing for your farmer boys and girls?" We said to them, "Come and look at our town and city schools. Are they not nice buildings, nicely ventilated and have we not nice blackboards in them, and well dressed children?" And they said, "We agree with that, but we hear you are an agricultural people, and we see your signs up in old London, and see displayed samples of oats and peas and other grains, and we see you have an immigration office in Whitehall, and advertise 160 acres free. What are you doing for the agricultural population?" And we were obliged to say, "We are not doing very much. The boy in the country is taking Canadian History and English History and arithmetic and Geography." Mr. Mosley said to me: "Are these boys going on to the High School like the other boys or back to the farm? Are they getting anything that will help them on the farm? Could not you do something for these boys that will make them more useful citizens at home?" And we commenced thinking about these things, and we have evolved a system that we think will help.

We have arranged with the Educational Department to send us anywhere from one hundred to three hundred teachers from the Normal Schools, who are going to teach in the country. They are coming to us this Easter and during three months we are going to have Professor Day, Professor Harcourt and Professor Hutt teach them, and they are coming over to the poultry department for a few days to learn what they can about these different things.

We want to let them know what poultry is, and what incubators are, so that they can give the children an opportunity to study things. Nature study is pointing out things of a rural nature. Professor McCready is going to give them studies to take home so that they can get the boys and girls to think agriculturally, in order that when they get to be farmers and farmers' wives they will know something about the things they are tramping over all the time. The names of the common birds and common insects and weeds, so that they will not go blindly out among them and not think, because their attention has not been called to them.

Then we have Mr. W. H. Day, Lecturer in Physics. A farmer said to me the other day, "What do they do with Physics in Agriculture?" The department of physics is one of the most important we have here. A man said to me the other day, "I live in Victoria County, and the water lay on ten acres of my land until June, and I could grow nothing on it but hay and oats." He notified our Professor of Physics, and he went down and gave him a plan so that he could underdrain it at an expense of about $14.50 an acre, and it is now the earliest field on the farm. There are hundreds of thousands of acres of land in this Province of Ontario that needs draining. The tile factories of this Province are now working overtime to get tile ready for the farmers who want to underdrain their land.

Then we have Mr. E. J. Zavitz, Professor of Forestry. What do we care about Forestry? We are a forest country. But some men come along like Dr. Clarke or Dr. Pinchot of Washington, and they say "Stop!" What is the matter? "Why," they say, "we have not got fifty years' supply of timber in the world. Germany is now importing wood. There are only two countries in the world that have more wood than they can use and that is Canada and the Scandinavian Peninsula, Norway and Sweden, and they are giving out."

I went down on the train this morning with the manager of the Massey-Harris Works at Toronto, and he said, "We have brought in fifty million feet of lumber from the United States since the first of January. We are buying nearly all of it in Arkansas and Ohio. We cannot get it in Canada, our timber is about exhausted." We are starting to grow here, little trees from seed. We have waste land all through this Provinces from which the timber should never have been cut, rocky places that are a disfigurement to the landscape. Suppose it does take fifty years, we are apt to think that is too far ahead. If it takes fifty or seventy-five years, what is the difference? It is going to give us a revenue and the Government has taken it up.

There are waste places north of Cobourg and in Norfolk County and in Simcoe and in Lambton, a strip nearly fifty miles long. Thousands of acres in Old Ontario could be replanted with first class pine, and the time will come when we will get this back. What have we got to say to posterity for what we have done in the year 1908? Millions of dollars worth of pine was burned up simply for the want of a little policing on the outside.

I might go on and speak of the work of Mr. J. W. Crow. If you tell a manufacturer that by doing a little extra work he would double his money, he would do it at once, but farmers don't always look at it that way, and very often they neglect to spray their orchards and lose more than half their crop. We want to tell the farmers how by doing little things they can make of this country a big and better and stronger and healthier and more wholesome country to live in. (Applause).

ILLUSTRATED ADDRESS.

By T. F. McGrew, Scranton, Pa.

I am sure you are all delighted with what your President said about what you are doing up here in the Province of Ontario, and I was delighted when he said what he did about old Scotland, because nearly two hundred years ago my people left Scotland and went to the south part of Pennsylvania. Two hundred years is not a long time, because the hills of Pennsylvania have been stripped in that time so bare that even the grass has forgotten to grow, and if you can send somebody down there from this country who will make one blade of grass grow where there used to be an hundred they will give you a gold medal.

Men and women have been foolish. Perhaps I have been foolish in spending so many hours of my life in attempting to trace out the different origins of poultry. I have traced a different origin from that scientific man, Mr. Darwin. When in Boston a couple of weeks ago, I was asked to make a few remarks. Old Uncle Henry Hales, an Englishman, said he had heard me talk before, and he did not believe a word I said, because Darwin knew more about it than I did; but when I asked the old gentleman if he believed everything Darwin said, he replied, "I am no monkey." Ben Butler said he had been called a great many things, but he had never been called a fool. I have been told by some people that I was wrong in some of my ideas as to the origin of poultry, but no one has ever told me yet that I was a fool in what I said; and I am going to try to present to you to-night my idea of the origin of poultry, and my reasons for saying what I do. Mr. Darwin and other people of his character tell us that all pigeons came from the Blue Rock. He also tells us that all poultry came from the Gallus Bankiva, or what we call Black Red Jungle fowl of India. Mr. Darwin had settled that theory beyond peradventure, when another gentleman discovered two more jungle fowl which he thought might have had a hand in the game, and then another man discovered in the Island of Ceylon a little jungle fowl that he described like this, "In form they are like a minature Shanghai or what you call in England the Cochin fowl." Now, we have these three, the Gallus Bankiva, Sombretta, and the Ceylon Jungle fowl. I have been fortunate enough to have seen and handled plenty of the Bankiva, and I have four living specimen of the Sombretta or Jungle fowl. From the jungles of India come a great many of the Pheasants; the Pea fowl are plentiful there. If all fowl came from the Gallus Bankiva where do the woolley hens come from, and where do the silky coat come from? It is very difficult to imagine, indeed, where these birds come from.

Mr. McGrew then gave a very interesting illustrated address on the different breeds of fowl and pigeons, describing each slide. His remarks were listened to with rapt attention.

DISEASES OF POULTRY WITH SPECIAL REFERENCE TO LIVER DISEASE AND WHAT IS COMMONLY CALLED "WHITE DIARRHŒA."

By Geo. Byron Morse, M.D., Ph.D., V.S.

[Dr. Morse is in charge of investigation of poultry diseases and diseases of cold-blooded animals, Pathological Division, U. S. Bureau of Animal Industry, Washington, D.C.]

I trust that you have brought along your salt cellars, for you will need a pinch or two of that excellent corrective. When our genial chairman tells you, "This is our opportunity to be instructed in these matters which we know too little about, and Doctor Morse is well able to give us the information we want," you should ask him if he has taken that information himself. You know that the chairman is reputed to be my strongest opponent upon this subject, and I suggest that, unless he shows evidence of conversion this morning, you call on him, when I have finished, to present his side.

It must be recognized that there is opposition, deliberate or unintentional, to the views I represent. Now, there are two ways of dealing with conditions of this kind. One is the diplomatic way; I am not able to adopt that method, I am a little afraid of it. The other is the method of the man who wants to fight a duel, and who says to you at once, "Prepare to defend yourself," and then draws. I am here not merely to urge you to stop a certain line of theorizing, but to charge any of you who are giving all your time and thought to the hypothesis of dietetic origin of liver diseases, with being obstructionists at the present moment in connection with our study of the diseases of chickens. I am sure that is a fair and square way of throwing down the gauntlet. I do not know of any thing that is more severe than that, and I would not dare say it if we did not have as chairman a gentleman whom we all know and whom we delight to recognize as always worthy to give battle on this subject. I speak thus strongly because poultrymen have been working on the theory of overfeeding and improper feeding in its various forms for years. You may trace back as far as you please in any of the poultry journals, and you will find constant reference to the idea that these various diseases of the liver are due to overfeeding or feeding the wrong material. Accompanying this theorizing has been apparently an increase in disease. Over against that we must place the work of physicians and the work of other scientists who have been investigating diseases and finding living organisms or germs as the causative agents of disease, with the result that in the measure that these microbian causes have been recognized diseases has been more or less controlled. But so long as there is this determination on the part of poultrymen to think that almost all the ailments of chickens are due to the same disturbance and to the same organ that most of the patent medicine advertisements charge with the ailments of man, namely, the liver, just so long will there be a refusal to accept scientific facts, and so a failure to secure benefit from these facts. I do not mean that you may not, in some cases, come back from the germ theory to that hypothesis, but I do say that if well meaning men of reputable standing in the scientific world are finding germs as causative agents in disease, and from time to time locating them in these very organs that you claim are affected, and are finding out that they cause disease in the liver and in other parts of the fowl's body as well as in the organs of other animals, and you refuse to recognize these facts, just so long are you helping to obstruct

the present movement of science in the study of poultry diseases. The best way is to get in line, accept and acknowledge the possibility of germs, thus giving the scientist a chance, and if he does not make good, lay his theory aside and take up again the old theory. There is one sure way of doing this; that is to have every agricultural college and every experimental station supplied with a poultry pathologist, who shall devote full time to the study of the organisms of disease which may, by the remotest possibility, affect poultry, and bring all data thus secured to bear upon the elucidation of poultry diseases. You say you cannot get the men or women? Yes, I think you can, because when once the germ theory is fully accepted and you start in to locate these germs in the animal or vegetal kingdom, you will find that there is a rather limited number, and it will be possible for your graduates who have gone extensively into this question, to prepare themselves, in a few months, to handle this question with considerable intelligence.

We may divide the diseases of the liver into two classes: infectious and non-infectious. The non-infectious diseases *are* important, nevertheless, I wish to put most of my time, to-day, on the infectious diseases.

Non-infectious Diseases.

Any disease which affects the liver must disturb the whole organism. Ordinarily speaking we attribute to the liver three functions, the production of bile, the production of glycogen, and the production of urea. In addition to these functions it also manufactures a various number of enzymes which have for their purpose the dissolution, the transformation, the precipitation and even the destruction of toxins that are brought by the blood to the liver, especially from the intestines.

Q.—What do you mean by toxins?

A.—As just used by me the word would signify chemical poisons which result from life changes in the organism, what I might call the products of tissue change in the living body. That is not the usual definition of the books, but I think it will cover what we are after in this study. Quite frequently the books give the definition in such manner as to connect toxins altogether with bacteria. We ourselves produce toxins in the various changes going on in the body in connection with the assimilation of food and the destruction of tissue. Bacterial life in its development produces toxins, when attacking an organism the bacteria discharge these toxins which have the same effect as though a poison had been introduced into the system.

Now, you see the importance of knowing something of the non-infectious diseases of the liver. Because if through bad feeding, through cold, or any wrong condition of living, the liver be disturbed in its functions, at once you have the whole assimilative work of the organism disturbed, and you have the system undermined in its power to resist the toxins that are generated by the bird itself, to say nothing of those that are sure to be produced by disease organisms that may attack the bird. We must remember therefore that there are diseases of the liver produced by bad feeding.

Q.—What would you call bad feeding?

A.—Over feeding; feeding wrong articles of food; feeding chickens that are in close confinement material that will furnish proteid matter in such a way that the bird will develop gout. Perhaps you had not thought of birds suffering from that disorder, but I hope to show you pictures to-morrow night of that very disease.

Q.—What food would you recommend?

A.—That will have to be left to the men and women who are experienced in such work.

Q.—That liver we had yesterday in Miss Yates' demonstration was the result of too high feeding?

A.—Yes, there occurred a breaking down of tissue, the normal substance of the liver was changed into fat. Now, then, that liver could not possibly cause a germ disease. Let me call your attention to something that only too frequently occurs. You call in a physician. He says, "I must take your temperature." He puts a thermometer in your mouth. Temperature, 102. He calls again, finds the temperature is 103 and remarks, "Getting close to the typhoid temperature." He orders a little calomel and tells you to keep quiet for a day or so. The fever subsides. The disturbance in the liver and in the whole organism due to a certain sluggishness of the liver is overcome. When the physician returns he finds your temperature normal, and to your statement that you now feel quite well, he responds, "If you had not called me in just when you did you would have had typhoid fever." Now, that is all bosh. It is the most absolute kind of rubbish for a man to talk that way. You cannot have the typhoid disease without bacteria of the typhoid class.

You may have a fatty liver, or a poor, old, dilated, fatty heart, and you may have an enlarged spleen, and you may be like Mephibosheth of old, "lame on both feet," and all these things combined could not cause a single germ disease, a single infectious disease.

The Chairman: If you have this fatty degeneration of an organ does that organ become thereby more easily exposed to germ disease?

A.—Mr. Chairman, you pulled my thunder last August at Niagara, and now you have drawn my whole charge. We may have much hope of our chairman coming round to the proper view. (Laughter.) In view of the fact that he knows these things I can only say to him in the words of a book, the reputation of which was established hundreds of years ago, "If ye know these things, happy are ye if ye do them."

Our chairman has anticipated just the point to which I was coming. If a person is in the condition I have described he is in a most splendid condition to become a victim of any pathogenic germ that is travelling about. It is for this reason you must maintain your vitality at the highest point. This is the very thing I tried to impress upon you at Niagara. These various conditions do not produce germ disease. You must have the organisms in order to have the infection. As I do not care to spend much time to-day on the non-infectious diseases, the point that we have just reached offers an excellent opportunity to turn to the discussion of

Infectious Diseases of the Liver.

The importance of infectious diseases is seen in the fact that although a non-infectious disease may terminate in death, still it begins and ends with one chicken, while on the other hand, an infectious disease, beginning as it may—and usually does—with one chicken, is very apt to end with killing one or two hundred birds or possibly the whole flock.

Taking up the infectious diseases I desire this morning to call your attention to a group of diseases represented by such specimens as you see here on the table. These specimens show marked changes in the liver, they are samples of diseases that present necrotic change. Pick up any of these

jars, and you would say, "Here are areas of necrosis," that is, areas of death in living tissue. Here, for instance, is a liver a portion of which appears healthy; on the other hand, other portions of it have suffered degeneration, even death, and where you see these little round nodules or cheesy spots, there you recognize what we call foci of necrosis or necrotic areas. There has been disease here that has caused complete death of limited, circumscribed portions of the living tissue.

I really think that apart from medicine, everybody ought to be familiar with the meaning of the word "necrosis." It means local death in living tissue, death of a portion of a living body. This word has an important position in one passage in the New Testament. When Paul used the expression, (2 Corinthians, IV. 10) "Always bearing about in the body the dying of the Lord Jesus," he used this word "Necrosis," "Always bearing about in the body the 'necrosis' of the Lord Jesus." Here was a man, a living man, who was constantly saying "No" to certain tendencies of the flesh, these negations being caused by his adherence to the word of Christ and to the life of Christ. It was death, or, using an old word, mortification within the living body. So you see the word is one that we ought to understand apart from matters of medical science.

I shall now place on the blackboard a list of diseases characterized by the presence of necrotic areas in the liver. This list is made up from cases that have been investigated in the laboratory at Washington in connection with the post mortem examination of chickens sent in for that purpose. Over against the name of the disease I place the name of the causative agent when that is a micro-organism. I am sorry to burden you with these long names, and do not blame the laity for lumping these affections under the one general title of "liver disease." Unfortunately, for the use of this general term, the treatment of these diseases varies according to the cause, hence the importance wherever possible, of securing a careful diagnosis.

Tuberculosis	*Bacillus tuberculosis*
Coccidiosis	*Coccidium tenellum.*
Cercomonadosis	*Monocercomonas gallinarum.*
Aspergillosis	*Aspergillus fumigatus.*
Pyemia	*Staphylococcus pyogenes aureus.*

Infection Doubtful.

Leukemia
Sarcomatosis
Carcinomatosis

Non-infectious.

Gout (visceral).

Tuberculosis.

All of these specimens are examples of tuberculois, in which disease we frequently have these necrotic areas developed to great size. Notice the prominence of these nodules, how salient they are, protruding above the surface of the liver. Here is a cut nodule, notice the peculiar cheesy character of the cut surface. Generally the liver is greatly enlarged. Sometimes on opening the fowl's abdomen the liver appears to be the only thing there. Here are some specimens in which the spleen is enlarged and studded with tubercles. Such a case as this, which I understand came from a goose, showing

this huge, chessy mass in the lungs is in my experience quite rare in poultry. The liver, spleen, and intestines are most frequently involved. Here is a fine specimen presenting tubercles on the intestines. These intestinal lesions are important as showing the source of infection and the manner in which the disease is spread upon the farm when once introduced. Many of these nodules open on the inside of the intestine and so contaminate the intestinal contents, and thus the droppings become infectious. I have been able to transmit the disease by placing healthy birds in cages with diseased birds.

Q.—May these necrotic areas be formed by dietetic causes or are they always the result of a germ?

A.—If you mean these necrotic areas, no; they can be caused only by the bacillus tuberculosis. If you mean necrotic areas similar to these, that is, whitish or yellowish, cheesy nodules, no; they would require either the action of micro-organisms or some malignant cause such as we have to assume in leukemia, sarcomatosis, or carcinomatosis. But if you mean to ask if dietetic disturbances can cause necrotic areas in the liver, I answer, "possibly, yes."

We know that bacterial toxins circulating in the blood often produce small areas of necrosis in the liver, so that the liver will appear studded with pinhead, yellowish spots. We must for this reason concede that it may be possible to have such areas produced by toxins generated as the result of what we call in medicine, faulty metabolism, what might be termed depraved nutrition. Let me at this point dispose of the last named disease in the list—visceral gout. We know that gout is due to faulty metabolism; sometimes it manifests itself in the joints; at other times it attacks the internal organs or viscera. To-morrow night I hope to show you pictures of visceral gout in a chicken, also views of minute collections of crystals of biurate of soda that having been deposited from the blood in different portions of the liver produced these small necroses.

A diagnosis of tuberculosis should never be accepted without a microscopic demonstration of the presence of the bacillus of tuberculosis in the nodules. The ordinary data which you send to the editor of a poultry paper, going light, pale combs, spotted liver, are not sufficient for a true diagnosis.

Q.—Dr. Brown, of England, says that when a chicken dies of roup it also has tuberculosis.

Dr. MORSE: I could not go with that, especially if by that statement it is meant that roup and tuberculosis are always associated in the same bird or that the two diseases own the same cause. While denying the *necessary* association of the two affections, I am perfectly ready to admit the *accidental* association of two such infections or even more in the same bird. A few years ago I found a triple infection in a Snowy Owl. One lung was quite destroyed by *aspergillosis*, a nodular disease, often resembling tuberculosis, and, as we shall see later on, produced by a mold. Now, in smears made from the cheesy material in those nodules I found a few tubercle bacilli, but that did not prove to me that tuberculosis was the cause of death in that case. I found a few little hard glands, somewhat enlarged, in the region of the intestines. This material I inoculated into guinea pigs with the result that they became tuberculous. On further examination of the owl I found the other lung congested, the liver greatly congested and the spleen enlarged and dark. In the lung that was not infected with aspergillosis I found nothing to suggest tuberculosis, but this did not warrant me in assuming that aspergillosis and tuberculosis are to be sought in association as in the

infected lung. As I examined further I noticed small areas containing yellowish gelatinous fluid and feeling sure I knew what that meant I sowed some of the heart blood, a bit of liver and a bit of spleen on to culture media and secured pure cultures of *Bacillus proteus*, that particular variety that has been recognized as the cause of infectious jaundice in man. This was indeed an association of diseases.

Q.—How are we going to avoid this disease?

A.—When purchasing new chickens fight shy of stock in which you find birds with anemic or yellowish combs, even if the owner does tell you that the feed hasn't been just right. If the disease should get into your flock, kill every fowl that shows signs of it. However, if the entire flock should be infected, try the Bang method, the method of eradication practised on cattle in Denmark.

Q.—How do you know this disease is there?

A.—Your suspicions should be *aroused* by finding birds which present an anemic condition of the comb and about the eyes. If such a fowl dies, carefully open the body and if you note yellowish nodules on the liver and spleen and along the intestines your suspicions should be *strengthened*. The only way to *confirm* them is to send this material to the nearest agricultural college, experiment station or pathological laboratory and have it examined by a competent microscopist.

Q.—Haven't they, by that time, got it bad enough to spread it to other chickens?

A.—Very likely; by means of the infective droppings contaminating the ground. However, you can eradicate the disease without destroying all the chickens at once. Keep the old stock on the old ground. Prepare new ground, upon which to raise the young chickens by top-dressing with lime, deep plowing and exposing the soil for some weeks to the sunlight. Now, take your eggs from this infected stock, wipe them in 95 per cent. alcohol or 4 per cent. solution of some good coal tar disinfectant, hatch in incubators, and raise the chicks at a distance from the old stock. When the new lot of chickens have come to laying age you may kill the old stock and treat the ground by the method just outlined.

Q.—Suppose I take two hens, one has tuberculosis, and the other has not, and I put the eggs in an incubator and raise chicks, won't they have tuberculosis?

A.—No.

Q.—Is it possible for the bacillus to be in the egg?

A.—For all practical purposes, no. Tuberculosis is considered by scientists generally as practically not an hereditary disease. That is to say, the number of cases of congenital infection is so small as to be really a negligible element for consideration in the battle against the disease. As to the actual possibility of the tubercle bacillus being in the egg, I must answer, "yes." The careful investigations of Koch and Rabinowitsch, published in 1907, prove not only the existence of tubercular disease of the ovary in birds, but also the possibility of the transfer of the bacillus to the egg. As early as 1889, Maffucci, an Italian experimenter, inoculated eggs with tubercle bacilli, incubated them and proved that while the presence of the bacilli did not hinder the development of the embryo, yet later, a few weeks after hatching, the bacilli began their destructive work in the body of the chick. In a later series of experiments, carried on between 1898 and 1903, the same worker demonstrated, among other facts that small quantities of tubercle bacilli were destroyed by the tissues of the embryo, although these same

quantities produced tuberculosis when fed to or inoculated into adult chickens or chicks hatched from healthy eggs. Several other investigators have secured results which lead to the conclusion that in birds as well as in cattle and swine, the possibility of infection of the embryo is too small to be taken into account in the eradication of tuberculosis.

Q.—Take a hen of low vitality, do you mean to say that she is going to produce healthy offspring?

A.—That is a question that must be answered by experience rather than by theorizing. If a brother or sister of mine died from tubercular disease, I should thank the physician for letting me know it. Why? Because I would recognize that I came of stock that appeared to be more easily susceptible to the microbe of tuberculosis, and I would take the precautionary measures requisite in such a case. I never like to brag about my health or my immunity to disease, yet, having looked a long way back into my family history, I sometimes say, "given ordinary conditions, I have no fear of contracting tuberculosis." Of course, I associate with family history the existence at present of almost superabounding health and, therefore, a marked power of resistance. But if I had among my ancestry individuals who had succumbed to this disease, I would recognize that I belonged to a strain that is susceptible, and I would live out of doors all I could. I would run a chicken farm, avoid working to the point of fatigue, eat all I could, and sleep out of doors eleven months of the year. What I have just said, you see, is in strict accord with the theory of weakened offspring from a breeding stock of low vitality. Nevertheless, on the other hand, experience compels us to go with such prominent authority as Professor Bang, of Demark who says that a farmer can eradicate tuberculosis from his herd without killing the infected stock. The calves are taken, at birth, away from their tuberculous mothers, and fed on pasteurized milk. This precludes all possibility of infection by association. Since there is practically no chance of the disease being inherited, if the calves are protected from contagion, he finally obtains a herd free from tuberculosis That method has proven satisfactory in the development of herds, and there has been thus far no evidence of weakened vitality.

Since we are all looking forward to a discussion of the subject of White Diarrhœa as the closing part of my topic, I will pass for the present the subject of coccidiosis which stands second on this list.

Cercomondosis.

The next disease of the liver that is characterized by necrotic areas I have placed third on the list and called it *Cercomonadosis*. This disease is caused by a micro-organism called *Monocercomonas gallinarum*, which, like the coccidium, belongs to the lowest group of the animal kingdom, the Protozoa. The cercomonad is a flagellate organism, that is, it is possessed of from one to four very long flagella or whips by means of which it thrashes about in the fluids. This liver has such small, scattered, almost depressed necrotic spots that I would venture to think it was a case of cercomonad disease. In Washington I have had cases similar to this, and when I have placed a minute bit of the cheesy material in a drop of normal salt solution and examined it under the microscope I have found numerous, small, oval, round or irregularly shaped bodies about fourteen twenty-five thousandths of an inch in length, sometimes in diameter, having at its blunt end a slender prolongation about the length of the body itself, and at its pointed end

from two to four flagella or whips united at their base. Sometimes we find but one flagellum, but this is probably because the others are broken off.

Prof. GRAHAM: Does Cercomonadosis ever attack little chickens?

A.—Yes. I frequently find it in fatal diarrhœas of chicks and even adult fowls. Since we know that the white color in so-called white diarrhœa is due to the presence of excretory matter from the kidneys you will not be surprised when I tell you that the diarrhœa caused in the chick by the cercomonad is sometimes white. However, speaking off-hand, I should say that the majority of cases I have seen have been characterized by dark to black fecal discharges. This black coloration, as you are of course aware, is due to the admixture of blood due to the character of inflammation produced in the intestines. In these cases I have never found the enlarged and plugged ceca found in coccidiosis. This cercomonad, possibly with a slight change in its second name, is the cause of canker in squabs.

Prof. GRAHAM: Carbolic acid would put that out of business?

A.—Yes, I think it might if taken early enough. The difficulty with squabs is that we are not apt to notice the disease until there is quite a mass of necrotic material in the throat and the tissues much distended with gas. Scrape off all canker in sight and apply, with a swab, 2½ per cent carbolic acid in glycerine. For diarrhœa caused by this organism inject into the vent 1 per cent. aqueous solution of carbolic acid. I find the same liver trouble produced by the cercomonad in adult pigeons as in fowls. I have never found the necrotic livers in chicks or squabs.

While on this subject of cercomonad disease I want to tell you that I believe that the majority of cases of roup may be set down as cases of cercomonadosis. I have quite frequently found it in the necrotic material of the mouth and of the eye. There are those who tell us that roup is due to a bacillus and that the cercomonad is not pathogenic (that is, disease-producing) and only happens to be associated with the disease. Now, in the first place, those who claim a bacillary origin for roup should produce the bacillus and several investigators claim to have done so, but the trouble that I find with their work is that nearly every man produces a different bacillus. In the second place, the *Cercomonas gallinarum* is pathogenic; as I have told you, I have found it in liver necroses where there was absolutely nothing else to cause the trouble. If this organism causes necrotic disease in the liver, why deny it the power of doing the same thing in the mouths and throats of chickens and squabs. Here is an important point in the recognition of this disease agent. You have no difficulty in recognizing them when active. But they appear to be chilled very quickly by cold, and killed too, for that matter. Now, as they pass into the quiescent stage of either chilling or death, they draw in the tail and their flagella drop off; they also assume a perfectly spherical shape. In this condition, unless one is very familiar with them he may call them white blood corpuscles, or if not up on the subject in general, might think they were cells of the tumor called sarcoma. It may in its encysted form even be mistaken for certain stages of the coccidium.

ASPERGILLOSIS.

Aspergillosis is another disease in which we find necrotic areas in the liver. This affection is caused by the presence in the tissues of a mold known as *Aspergillus fumigatus*. This mold has been known for years as the cause of what was long termed a pseudo-tuberculosis. It is a very frequent disease in birds, in which it causes especially a disease of the lungs

and air-sacs simulating tuberculosis. The liver, as well as other organs, has to submit to the encroachments of this organism, in which case we find the liver studded with minute points of necrosis. I refer to aspergillar disease of the liver, not because it is important but to keep you in mind of the fact that there are numerous diseases of the liver that are not due to improper feeding or diminished vitality.

While speaking on this disease I wish to call your attention to the recognition last spring of aspergillar disease in very young chicks. On page 32 of the Report of the Chief of the Bureau of Animal Industry, of the U. S. Department of Agriculture, is a reference to the fact that it had become possible to differentiate between two forms of so-called white diarrhœa. After the publication of Circular 128, I saw some statements in poultry papers, and also received a few letters to the effect that Dr. Morse did not know what he was talking about when describing white diarrhœa. I had described, as the particular alteration in white diarrhœa, the distended, cheesy ceca. But these people said that the majority of the cases were associated with nodules in the lungs. Such cases have been termed "lungers" by many poultrymen. So I took up the subject of "lungers," and 95 per cent. of all the cases that came to hand last spring proved to be cases of aspergillosis; that is, I could not find a sign of a coccidium in these nodules, neither could I find a trace of baccillus tuberculosis. I did find a mass of felt-like material, the mycelium of a mold. I transferred portions of these nodules to potato and in almost every instance was able to grow the *Aspergillus fumigatus*. From some of my investigations I am inclined to think that there may possibly be other mold forms incriminated sometimes, for instance, a penicillium form.

One is naturally anxious to seek out the source of a disease like this. And the question presents itself, "Shall we have to go back to the egg itself?" As long ago as 1740, a French physician, Ferchault, in his work on "The art of hatching and rearing at all seasons domestic birds of all species," reported the finding of molds in incubator eggs, the shells of which appeared perfectly intact. Since then several other investigators have found molds, notably this mold that is engaging our attention, in the interior of egg shells. I recall, especially at the present moment, that Lucet, a well known French investigator, found this Aspergillus in eggs that had failed to hatch, the embryo dying during incubation. If a mold has been introduced into an egg prior to incubation, the conditions of incubation furnish the necessary requirements for the development of the mold. We might thus have the mold developing along with the embryo. This might, therefore, be the cause of chicks dead in the shell; it might also be the reason for "lungers" developing at such an early age.

Q.—Would that come through unclean nest boxes?

A.—Newly hatched chicks might be infected by breathing the spores of molds in clover chaff or some such material placed in the nest. The infection of the eggs, however, could not come through unclean nest boxes. We find intestinal mold diseases quite frequently in fowls. The spores of such molds might be driven from the cloaca up into the egg tube and located in the egg prior to the application of the shell. It is known that molds growing inside the egg do not develop fruit heads owing, probably, to an insufficiency of oxygen.

Q.—We have found in a freely ventilated incubator, where there is an exceptional amount of oxygen, that lungers are more apt to develop. Would carrying extra oxygen cause it to grow better than it would under natural incubation?

A.—I do not know how that would be; it might. The Aspergillus is known to be essentially an aerobic organism, that is, one that grows best in the presence of oxygen.

Last spring I received from one man several lots of lungers. He first wrote me about White Diarrhœa. I told him to secure new incubators and new brooders. He did so, and then sent me these lungers. I met him at Niagara last summer and he told me that he had not had a case of lungers since he began using a fireless brooder. Now, I am not here to advocate fireless brooders, but you can see that anything that means the introduction of heat increases the likelihood of molds.

Q.—Will molds develop in a very dry temperature?

A.—Excessive dryness of the atmosphere would be a hindrance, but you must remember that in a brooder where you are raising chicks you are constantly receiving a fresh supply of moisture from the air; dry the atmosphere sufficient to prevent the growth of molds and you would kill your chicks. An interesting point in connection with the case just mentioned is that whereas a new incubator and a new brooder, unsterilized might lessen the cases of coccidiosis, to safeguard against aspergillosis or brooder pneumonia, you would still have to disinfect even the new machines. In the latter case the spores are floating in the air, and the ladies will tell you that if you leave almost anything around the house it will become moldy. Laying aside the possibility of egg infection within the hen it would appear that the new brooder was infected with mold spores and thus the lungers were produced.

Q.—What section were they in?

A.—It was north of Washington.

Q.—If these chickens had been hen hatched, they would not have been lungers?

A.—The first cases of lungers that I ever saw were hen hatched and hen brooded.

Prof. GRAHAM: I do not think we have ever had a lunger in a hen hatched chicken. We get a bird with a congested lung; we find that in the egg before it hatches. You can take that egg on the 20th day, and on the 21st day, you will find that congested lung in the chicken before it is hatched.

Dr. MORSE: Will you send me some?

Prof. GRAHAM: Write to B. S. Hosmer, of Massachusetts, and he will keep you stocked with them. A doctor in connection with Harvard Medical College, conducted this work for me up to about three years ago, and then he said that he had not time to go any further. You will very often find one of the air sacs of the chicken filled with matter. It is right back of the lung.

Dr. MORSE: If you insert a sterilized needle into that and sow some of the material on a potato you will probably grow the mold, Aspergillus.

Q.—Why do we so frequently find incubator chicks with only one lung?

A.—I do not know. I was not aware of such an occurrence.

Q.—Would that mold sometimes adhere to some part of the grain?

A.—Yes; and its direct relation to the disease in pigeons was beautifully shown by one investigator who found the mycelium of the mold developing from a grain of corn that had passed into the bronchiole of the bird. In France there are pigeon feeders who feed thousands of young pigeons daily by taking into the mouth a mixture of grain and water which is then forced into the bird's mouth in a manner similar to that practiced by the old birds in feeding the squabs. These men frequently suffer from a

pulmonary disorder, and instead of finding tubercle bacilli in the sputum physicians find only the mycelial threads of this mold.

Q.—When you are buying a sack of grain, if you put your nose into it you get a musty smell; will not that kind of grain produce disease?

A.—I should be afraid of it. Those who are feeding large numbers of chicks might easily institute an experiment. Feed some of the chicks sterilized grain and boiled water; others, sterilized grain and unboiled water; still others, in the usual manner. By this method the origin of the trouble might be apprehended.

Q.—The litter in the hen house should not be moldy?

A.—No, it should not.

Q.—What effect would carbon dioxide have on the development of molds?

A.—As a food, nothing; for only plants containing chlorophyll have the power of utilizing carbon dioxide; plants that do not contain chlorophyll are compelled to obtain their carbon from the carbohydrates. An atmosphere saturated with carbon dioxide inhibits or stops the growth of molds. A slight addition of CO_2 acts as a moderate stimulant, but mainly, if not only, by reason of its slightly acid character.

Mr. Nix: I never had a case of White Diarrhœa in a carbon dioxide incubator.

Pyemia.

Pyemia may be defined as blood poisoning, characterized by the formation of abscesses in the internal organs. We have not time for a careful study of all these diseases. I mention this disease in the list because the presence of abscesses in lungs, liver, spleen, and along the intestinal walls may to the untrained eye appear identical with tuberculosis or some of the other affections mentioned. I hope to show you on the screen to-morrow evening such a case as this just described which originated from such a simple thing as "bumblefoot." The palmer abscess was the starting point for the abscessess in the liver and other viscera. Treat your cases of bumblefoot as serious ailments; they contain pus. An abscess, that is, a puddle of pus, should be evacuated as quickly as possible.

Leukemia.

Leukemia is a disease characterized by a great increase in the blood in the number of white blood corpuscles and scattered accummulations of the same in certain internal organs, notably the liver, which may then become greatly enlarged and so studded with small, round collections of these cells as to give at first the impression of tuberculosis. Professor Moore has described an infectious leukemia of fowls dependent upon the presence of *Bacterium sanguinarium*. Poultry, however, appear to be affected with a leukemia of the same character as that which is seen in animals and man. It has not been much studied neither has it been frequently observed. It is of special interest just now because several pathologists, on account of the apparently extreme malignancy of the cells, are inclined to connect it with the next disorder in our list.

Sarcomatosis.

Under the popular title of cancer are included two important groups of malignant tumors which we know as sarcoma and carcinoma. For the poultryman, there is, and there need be, no difference between them; they

are tumors, they are malignant, that is they steadily tend toward death. We may have in the liver a tumor nodule having the kind of structure that the veterinarian calls sarcoma; we may find several such nodules in the liver, and then we may speak of sarcomatous disease of the liver; or again, we may find one of these sarcoma nodules arising in the liver or elsewhere and resulting in the distribution of secondary nodules of the same kind throughout the body and especially in the internal organs, it is this that we call sarcomatosis. It is in this form particularly that we get the necrotic areas in the liver.

Carcinomatosis.

From the description given of the preceding disease you will readily understand that carcinomatosis is a generalized condition of tumor-nodule formation of the type known as carcinoma or true cancer. By the naked eye these nodules are not likely to be distinguished from those of sarcomatosis. Carcinoma is the type more likely to occur in the ovary of hens, and may perhaps have its origin in the irritation resulting from prolonged efforts to develop a great egg producing strain. I quite frequently see cases of hypertrophied ovaries from such a cause. If in a hen that appeared to have a hypertrophied ovary you found cancerous nodules scattered throughout the liver and perhaps other organs, you would be justified in calling the disease carcinomatosis, the ovary being the starting point of the carcinoma and the liver showing secondary cancer growth.

Coccidiosis.

Before we turn to that never ending subject of White Diarrhœa, or, as I prefer to term it, Coccidiosis, permit me to emphasize the fact that I believe I have, this morning, summoned to my aid enough diseases of an infectious or malignant character to demonstrate the unwisdom of calling all diseases of the liver that present whitish or yellowish spots by the one name of liver disease, and attributing them all to the one cause of over feeding or improper feeding. When you have disease-producing germs associated, as I have shown you above, with certain definite diseases, you must recognize the relationship between the germ and the disease as cause and effect; and to get rid of the disease you must get rid of the germ causing it. It is so with White Diarrhœa or Coccidiosis.

Q.—Will you suggest a method of treatment for these coccidia?

A.—If this disease exists on your place, do not fail to give the flock, once or twice a month, a dose of Epsom Salts, estimating one-third of a teaspoonful to each adult bird. (We do not use Epsom Salts so freely in cold weather, but on the approach of March we begin its use.) What you need, when you have intestinal affections such as we are now considering, is to use it quite frequently.

Mr. Nix: Do you not often notice with apparently healthy chickens that a very high percentage are affected with the coccidium?

A.—I think a chicken carries it about as an every-day-inhabitant of the cecum.

The Chairman: You have found that all chicks that die of White Diarrhœa, die of Coccidiosis.

A.—The presence of Coccidiosis to such an extent as to cause death is brought about by probably two conditions: one is the actual exposing of the chicks to the infection of the Coccidium, the other is the fact that the chicks are so low in vitality.

Q.—Are the two things necessary? Will the Coccidium make the disease where it is otherwise a healthy chick, or does it require a chick of lowered vitality, in order to increase to such an extent as to cause death?

A.—To the two parts of your question I answer, respectively, yes and no.

Q.—Have you in your microscopic examination made tests between chicks that have been incubated under healthy conditions compared with chicks where it is present, or have you only dealt with outside chicks?

A.—I have made no tests with incubation. Such tests are absolutely necessary before some of these questions can be settled, and that is why I call for a poultry pathologist at every poultry experiment farm.

Q.—You are inclined to the conclusion that infection is very much more serious, and almost the origination cause rather than the weakened constitution of the chicks exposed to the infection.

A.—Yes, to a certain degree.

Q.—What degree?

A.—Every one of us is satisfied that the man who is perfectly well is better off in his conflict with disease than one who is weak; that is a self-evident proposition. But that principle of the well-nigh all-sufficient defensive powers of health which you have in mind, while perfectly applicable to adult life suffers considerable modification when referred to infantile life. The delicate epithelial lining of the chick's intestine is an easy prey to Coccidial attacks.

Q.—On that ground, is it not more important to keep yourself healthy and strong than to be trying to dodge these numerous germs?

A.—That is so. But then you must recognize that the organism does the damage, and that it is that particular organism that you avoid by that increased vitality. It is a simple principle of warfare: you must first of all recognize your opponent in order to know how to meet him offensively or guard against him defensively.

Prof. GRAHAM: One is the major and the other the minor; which is which?

A.—Suppose you are out camping. You have food, you have it prepared for cooking, you get together some chips and other dry material; you are ready now to start your fire but there is not a match to be found. What do you regard as the important thing? At twenty minutes to nine this morning I stood at the post office in that driving snow storm, and not a car there. I said to myself, "I am like Mark Twain, when from the scene of a railroad accident he telegraphed to a waiting audience, 'I have every motive to come to you except a locomotive.'" I think you all see the point. In the case of the fire you have all the predisposing causes of the fire; the exciting cause is that match, and if you do not get that exciting cause you won't have your fire. The coccidium is the exciting cause; it is the match. You cannot have the fire of coccidial inflammation, that is to say, Coccidiosis, without the coccidium.

The CHAIRMAN: You say you have the organism in almost every living chicken?

A.—I should hardly feel safe in saying that; but we will let it go at that. Now, the existence of the coccidium in the intestines of the chicken must have a beginning. If that beginning occurs in the very earliest period of chick life, owing to the very delicate character of the chick's tissues, there is certain to ensue a necrotic or canker-producing inflammation of the ceca, causing a more or less complete plugging of those portions of the intestines and, consequently, death. If, on the other hand, this beginning

occur in later life, the results may be somewhat different. Here, for illustration, is the intestinal tract laid open to expose some of the epithelial cells. The strong chicken and the weak chicken possess alike these epithelial cells. Floating about, in the intestinal contents, are certain coccidial bodies which break up finally into sporozoites. Each one of these sporozoites, having power to enter a healthy cell, now proceeds to attack one of these epithelial cells. If hundreds of these sporozoites are set free to attack this epithelial lining, there will result a pouring out of mucous, and your chicken will have an intestinal catarrh. This occurs whether your chicken be strong or weak. If the chicken is a strong, healthy bird this intestinal catarrh will bring about merely a weakened condition of the bird. If, on the contrary, the chicken is one of low vitality or just recovering from roup or some such disease, the simple intestinal catarrh produced by the coccidia may be sufficient to kill it. But in addition to the effect of the attack itself, here are some cells greatly swollen by reason of the coccidia entering and developing within them. These cells become more or less torn, and you now have the whole body of the chicken exposed to the entrance of any harmful bacteria that may be in the intestinal canal. The same thing occurs when you scratch your hand; your body is exposed to the entrance of pus germs that may be floating about in the air. Furthermore, some of these bacteria when thus vegetating in the tissues which they have attacked, generate very deadly toxins. As a result, some of the stronger chickens that, at night, do not appear sick, are dead in the morning, due, in all probability, to the rapid development of septicemia or a quick poisoning of the body by toxins.

The CHAIRMAN: Have you found an abnormally large unabsorbed yolk and have you found the umbilical cord contracted?

A.—Unabsorbed yolk was present in only about half my cases of White Diarrhœa.

Q.—Have you examined the condition of a healthy chick as to the amount of yolk

A.—No; because I have not had enough chicks to examine.

Q.—How can you say definitely that the chicks that you have examined have not been troubled with unabsorbed yolk

A.—If, at the autopsy of a chick, I find associated with a disease a micro-organism that has been demonstrated to be disease-producing in other animals, and if, in connection with its presence in this chick, I find results that are identical with the results of its presence in other animals, I am compelled, according to scientific methods, to assume that that organism has been the cause of disease and death in the chick that I am examining. When I find the ceca filled with cheesy matter, and when I find that by laying back the wall of the cecum and scraping it I can obtain hundreds of these coccidia, then, if I know that in the rabbit such cheesy matter is due to a like organism, I must admit that these plugged ceca in the chick are due to that same micro-organism. I find coccidia alike in both rabbit and chick; I find similar cheesy material associated with the coccidia in both rabbit and chick: there is no unabsorbed yolk in the rabbit, therefore, unabsorbed yolk, as a cause, must be thrown out.

Q.—Why is the coccidium so increased in one case and not in the other; it must be due to some cause outside the coccidium?

A.—I see what you mean; but as a means of coming at the cause of disease you are wrong. The position you take is absolutely unscientific, and if assumed by physicians would destroy the whole fabric of medicine as we understand it to-day.

Q.—Why?

A.—Because you introduce as a specific causal factor something prior to the exciting cause which is itself the only specific causal agent.

Q.—Doctors admit the fact that many patients have a disease that probably the majority of patients do not die of, but the presence of that disease gives rise to other diseases which are the terminal causes of death. Faulty incubation might be the grounds upon which the coccidium lives. I want to find out how to get chicks that will live.

A.—Pneumonia, as a terminal disease, carries off a large number of sufferers with diabetes. That fact, however, does not make diabetes an *essential* factor in pneumonia infection. Quite healthy men are sometimes attacked with pneumonia and succumb. The cause of pneumonia is the pneumococcus. Just say that Professor Edwards, of Guelph; Dr. Hadley, of Rhode Island Experiment Station; Dr. Morse and others are right when they say that the so-called White Diarrhœa is a Coccidiosis, and that the coccidium is the cause of it. Admitting that, we can then, together, investigate the results, immediate and remote, of faulty incubation and also seek out the source of these coccidia.

The CHAIRMAN: I am perfectly free to admit that you find this coccidiosis; but why is it there? That is where we differ.

Dr. MORSE: Then I take it that you are willing to admit that White Diarrhœa is, or appears to be, intestinal coccidiosis.

A MEMBER: Everybody admits that, but we want to know why it is there?

The CHAIRMAN: I believe that what we have got to attack is something behind the Coccidiosis. Do not believe that I am converted.

Dr. MORSE: If I were held on a criminal charge, I should want no better lawyer than Mr. Baldwin.

Mr. MCGREW: I think it would be a dreadful thing if Dr. Morse should return from here and think that any of us did not believe him. I think we all believe him thoroughly, but we want a cure.

The CHAIRMAN: I think this has been a most entertaining and instructive address, and no one appreciates more than I do the work Doctor Morse has been doing. One cannot meet Doctor Morse without appreciating the work he is doing, and I thoroughly endorse what Mr. McGrew said. I think we all thank Doctor Morse very heartily for his frank discussion, and the information he has given us in such an able, scientific way.

POULTRY IN EASTERN COUNTIES.

By VICTOR FORTIER, C.E.F., OTTAWA.

My embarrassment in appearing before you is greatly increased by the fact that I must use a tongue in which I am painfully conscious of being very deficient, and I sincerely apologize for disfiguring so badly your beautiful language.

Allow me, however, to offer my most sincere thanks to the Minister of Agriculture, Hon. Mr. Fisher, who kindly permitted me to accept the most kind invitation of the President, Mr. Creelman.

Following the advice of Prof. Graham, whom I had the pleasure of meeting at the Ottawa Exhibition on the 20th January last, I have changed the subject I had intended to put before you, and I will briefly outline the

present state of the poultry industry in Eastern Canada, principally the Province of Quebec, and by giving you the results of some personal experiments, point out some of the causes which, in my opinion, are hindering the rapid expansion of that important interesting and profitable branch of farm work.

Looking at the official figures, we see that in 1901, the number of poultry in the whole Dominion, was 17,922,658 at the present time, Ontario has about 12,000,000 of farm birds and at Quebec at least 5,000,000.

Those figures speak for themselves, and show that the farmers throughout the Dominion are becoming aware of the possible profits to be realized in the poultry industry which is developing in Canada, where there is still an abundance of room and opportunity for further extension.

Almost everywhere the demand exceeds by far the supply, especially in Montreal, Quebec, Three-Rivers, Riviere-du-Loup, Sherbrooke, etc.

However I must say that it is rather the quality than the quantity that is lacking, and that our farmers are trying earnestly to remedy the deficiency by replacing gradually the common hen by our excellent, varieties noted for their egg and flesh producing qualities: Plymouth Rocks, Wyandottes, Orpingtons, etc. etc.

You all know, that the commercial value of the products of the poultry industry has been in 1901, $16,010,718; of that amount, Ontario has received $8,881,387, and Quebec $3,173,634.

If we consider the climatic conditions of these two large Provinces, we shall have to admit that they are much more favorable in Ontario, and that the big difference shown by the above figures is not so abnormal as it looks at first sight. In Ontario, where the climate is much milder, poultry raising can be started earlier and consequently yield a bigger percentage of profits. Here, your chickens are almost ready to be placed on the market when in Quebec, our farmers are just starting incubation. In autumn, your birds can still run out of doors, when in Quebec, they are already confined five or six weeks in their winter quarters.

In spite of those unfavorable circumstances, I am sure that there is as much enthusiasm among the poultry breeders of Quebec as among those of any other Province. If in Ontario, the production of 5 lbs of chicken flesh causes as much enthusiam as the production of 1,000 lbs of beef in Quebec, the successful producer of 5 ounces of feathers is as proud and enthusiastic as the breeder of cattle who hopes to obtain a first prize at the exhibition.

There are at the present time in the Province of Quebec six poultry associations, which hold yearly exhibitions at Montreal, Quebec, St. John, St. Jerome, Granby and Victoriaville. We hope that in the very near future, as a result of the efforts of the Provincial Government, we shall see a dozen others in that Province.

In addition to these local exhibitions they have in Quebec the provincial and county exhibitions, where many splendid specimens of poultry and of the products of the poultry industry, are to be seen.

What our Province of Quebec is lacking most is a fair supply of literature upon the subject of poultry culture. There is not a single periodical entirely devoted to the subject. However, "Le Journal d'Agriculture," 75,000 copies of which are published monthly by the Provincial Government, a paper which is read mostly by farmers, endeavors to do its best in that direction in devoting as large a space as possible in its columns to that important industry. Several of our big daily papers seem to take an interest in the question, and we are told that we may expect very soon the appearance of the first poultry review in the Province.

The Agricultural School of Oka and the Macdonald Institute of Ste. Anne de Bellevue, possess a very important poultry division which takes every day more and more extensions.

Every year the lecturers on agriculture give through the Province some fifty lectures on poultry, and it has been noticed that the most popular branch of the farm work is poultry keeping.

In those lectures we endeavour to impress our farmers with the necessity of being very prudent in undertaking and managing that industry. We especially recommend them to begin on a small scale and to increase gradually their flock. We advise them to start by keeping from 50 to 150 hens, to hatch annually from 100 to 200 chickens, and not to undertake the poultry culture on a large scale before they have acquired the experience and a thorough knowledge of management, essential to success.

In the Province of Quebec as well as elswhere, it is the inexperienced and ignorant would be poultry keepers, who have injured that industry. Knowing no better, they start on small pieces of land, in village, town or city lots, with any variety of fowls, unsuitable poultry houses, too small, badly ventilated, etc., and they are very much surprised when they fail in their undertaking.

Their failure frightens many good farmers who are thinking of trying their hand and see only the results without knowing the causes of that failure.

Others want to imitate our active neighbors from the U. S., but as they do not take sufficiently into account the differences of climatic conditions, their failure is just as complete.

Another very important cause which hinders in Quebec the development of poultry culture, is, I think, the erroneous idea handed from father to son that the hens must be kept in heated poultry houses in winter, not only to have them laying eggs, but also to keep them in good condition. As you all know, gentlemen, experience has shown that such is not the case.

Our modern poultry houses, built with a single thickness of boards with the south side covered with a cotton front, and provided with a comfortable roosting room for the night, or any other poultry house of the same kind, with a ceiling of straw, give the best satisfaction even in our coldest regions. This style of poultry house is adopted almost everywhere. They are found very satisfactory, and the hens lay as much and thrive in every way better than in the artificially heated houses, which are much more expensive.

Two other causes, and I dare say the most important, of the failure in many cases, are, the want of careful selection of the laying hens, and the late incubation of birds intended for breeding stock.

The hen hatched early. will give reasonable profits the two first years and even the third year, whilst a late hatched hen will never furnish any returns worth while.

The egg production is not dependent only on substantial and rational feeding, but also on several other conditions which form a very important part of the knowledge required by the successful breeder.

It is possible to insure and to add to the laying propensities of the hen by simply proceeding with the incubation one to two months earlier in the spring. Experience has proven that pullets hatched before the 15th of May, often start laying in October. If a well appropriated and well balanced ration is given there will be an abundant yield of eggs in November and December.

It is, of course, understood that we suppose that an intelligent and careful selection has been made, for we must never forget that weak and degenerate birds, though bred from an excellent variety, never gave as many eggs the

first, nor even the following years, as those that have grown and developed normally. Late hatched pullets are no better than delicate and ailing ones, they are both bad layers.

In order to be sure that poultry raising will be profitable, the following rules are most important:

1. Consider the conditions of climate and atmosphere.
2. Chose with care the breeders, by practicing a close, and intelligent selection.
3. Have the birds hatched early.
4. Take into consideration the health of the birds.
5. Feed the birds intelligently and observe the golden rules of hygiene.

Experience is more instructive and more conclusive than the very best of theories, and therefore, I thought it would be interesting for you to hear the results of experiments conducted by myself with the greatest of care at the Experimental Farm of Ottawa, during the last two years.

My first experiment was conducted with 8 pullets, 4 Plymouth Rocks and 4 White Wyandottes, hatched between the 15th of May and the 1st of July, 1906. These 8 pullets were normally developed birds, and had been kept during the winter in an artificially heated poultry house, where they occupied a space of 6 feet by 9, or 54 square feet, giving each bird about 7 square feet. During summer, they had daily the run of a yard 6 feet by 48, and every three days they were allowed on a plot of well shaded land measuring 75 feet by 75, where they found an abundance of green grass, insects, etc. etc.

These pullets received the following rations:

Grain: half oats, half wheat, distributed morning and evening in winter in the litter.

Cut green bone, at mid-day every three days.

Mash at mid-day every three days.

Green food (mangels, turnips, etc.), at mid-day, every three days.

2 pt. shorts, 1 pt. g. oats, 1 pt. g. barley, 1 pt. beefscrap, added after the 6th of May to replace cut-bone.

Grit, oyster shell and water were always in supply.

8 Pullets Hatched between the 15th of May and the 1st July, 1906.

4 White Plymouth Rocks and 4 White Wyandottes.

Varieties.	Hen No.	1907							Eggs laid.	Remarks.
		Feb.	Mar.	April	May	June	July	Aug.		
W. P. R....	12	.....	9	11	7	.....	.....	.....	27	Dead May 10.
"	31	13	2	5	3	4	.....	.....	27	" July 1, light.
"	80	2	1	6	7	.....	10	7	33	
W. Wy.....	72	.....	5	4	3	.....	5	6	23	
"	78	.....	1	1	.....	.....	.....	.....	2	" May 16, "
"	88	.....	.....	.....	.....	.....	.....	.....	.....	" " 1 "
"	90	....	7	12	5	.....	.....	1	25	
"	97	14	12	4	5	.....	.....	.....	35	
Total....	.....	29	37	43	30	4	15	14	172	Average 24½

The results as shown in the adjoining chart, give an average of 24 eggs per hen. I must add that in this experiment, as in all the others, we made use of the trap-nests in order to ascertain the individual qualities of each hen.

Those pullets commenced to lay only in February, and one died in May without having laid a single egg. Moreover, 4 died during the year though they appeared in good health during the spring and winter. They died not of tuberculosis, but of that disease called "light," weakness of constitution, or lack of vitality.

If we compare those rather poor results with those of a second experiment conducted under the very same conditions of wintering, space, and nourishment, it will be clearly seen that the time of hatching is a very important factor in the obtaining of profitable returns, although it is not the only cause of success. If pullets hatched early suffer from an arrest of their normal development, they will give poorer results the first year than those hatched later but whose growth has not been hindered.

For this second experiment we took seven pullets, 4 B.P.R. and 3 White Wyandottes, hatched between the 5th and the 25th of May. These pullets for some reason or other had not grown normally, they commenced to lay only about the end of January and give the small average of 15 eggs per bird, whilst the pullets of the same hatch but which had grown up normally, produce a number of eggs four times as large.

The two adjoining tables give the details of the experiment.

7 Pullets Hatched between the 5th and 25th of May, 1906.

4 Barred Plymouth Rocks and 3 White Wyandottes.

Varieties.	Hen No.	1907								Eggs laid.	Remarks.
		Jan.	Feb.	Mar.	April	May	June	July	Aug.		
B. P. R.	21	.....	.....	.....	.....	1	.....	.....	.....	1	None dead.
"	24	.....	.....	.....	.....	.....	.....	.....	.....	.....	
"	48	.....	.....	.....	.....	1	.....	.....	.....	1	
"	57	.....	1	9	11	5	.....	.....	.....	26	
W. Wy.	7	7	9	7	10	8	.....	6	4	51	
"	35	.....	2	7	12	9	.....	.....	.....	30	
"	63	.....	.....	5	.....	2	.....	.....	.....	7	
In straw	.....	.....	.....	1	2	.....	.....	.....	.....	3	
Total..	.....	7	12	29	35	26	.....	6	4	119	Average 15½

All those birds appeared to be in excellent health.

Same Birds Second Year.

6 Hens, 2 years from 1st of November, 1907 to 31st Oct., 1908.

Varieties.	Hen No.	1908									1907		Eggs laid.	Remarks.
		Jan.	Feb.	Mar.	Apr.	May	June	Jly.	Aug.	Sep.	Nov.	Dec.		
B. P. R.	21	....	.....	.....	.....	....	.....	....	.....	....	.....	....	.....	Dead Nov. 16.
"	24	.....	.....	8	12	....	.....	....	.....	....	.....	6	26	" May 26.
"	48	5	.....	1	.....	....	.....	....	.....	....	.....	....	6	" Mar. 26.
"	57	9	4	4	.....	.....	.....	....	16	....	.....	4	37	
W. Wy.	7	....	4	.....	.....	3	4	....	13	....	.....	....	24	
"	35	21	16	11	11	10	.....	7	.....	....	.....	11	87	
"	63	6	6	7	9	4	.....	8	13	3	2	14	72	
"	80	....	11	3	4	....	....	....	.....	....	1	8	27	
Total..	....	41	41	34	36	17	4	15	42	3	3	43	279	Average 40.

No. 21 B. P. R. dead the 16th November, 1907, was replaced in order to continue the experiment by No. 80, W. Wyandotte, dead the 16th of May, 1908.

Those miserable results having given us but very little satisfaction, we undertook in 1907 and 1908 another experiment, choosing 9 pullets hatched about the 12th of June, 1907, 3 barred Plymouth Rocks and 3 White Wyandottes with 3 Buff Orpingtons. These 9 pullets were normally developed, under exactly similar conditions as those of the other two experiments, same poultry house, same space, same food and same care.

The results were far from being satisfactory as we only got an average of 31 eggs per bird, as shown in the following table:

THIRD EXPERIMENT.

9 Pullets, 3 Barred Plymouth Rocks, 3 W. Wyandottes and 3 Buff Orpingtons, hatched about the 12th of June, 1907.

Variety.	Hen No.	1908							Eggs laid.	Remarks.
		Feb.	Mar.	Apr.	May	June	July	Aug.		
B.P.R.....	8	.....	1	10	6	.....	7	2	26	
"	26	4	3	.....	.....	.....	.....	.....	7	Dead 29-11.
"	36	.....	4	5	.....	.....	7	6	22	
W. Wy.....	51	11	7	14	8	.....	7	.....	47	
"	54	9	3	18	18	.....	8	8	64	
"	57	13	3	.....	.....	.....	.....	.....	16	" 22-4.
B. Orp.....	61	.....	4	7	.....	.....	.....	.....	11	
"	75	12	12	17	4	.....	.....	.....	45	" 16-7.
"	99	4	.....	14	17	.....	8	.....	43	
Total.....	.....	53	37	85	53	.....	37	16	281	Av.: 31 eggs.

You will readily agree with me, gentlemen, that hens which lay an average of only 15 to 30 eggs the first year and 39 the second, do in no way pay for their keep, and certainly do not cover expenses. And yet a large number of our farmers will keep such birds over winter, expecting to get a fair yield of eggs or a good weight of flesh.

It is also important to remark that mortality is much greater among late hatched birds than among the early hatched ones.

It might be possible, perhaps, to get better results, where the climatic conditions are more favorable, but our experiments were conducted with all possible care, and I do not believe we could improve on them in our district.

A good poultry breeder should then be most careful in the selection of the birds he intends keeping over winter. He should not hesitate for one moment to sacrifice not only the late hatched, that is those hatched after May, but also those birds whose growth for some reason or other has been held back, or which have not attained their normal development, not only during the first weeks, but also after three or four months.

Following are the results of another experiment with 10 Barred Plymouth Rock pullets; carefully chosen, hatched between the 5th and 20th of May, whose growth, for some unknown reason, had not been normal, and which had developed very slowly after the age of three months, that is until after the month of July. Extraordinary care was bestowed on them, and the ration already mentioned given them regularly.

These pullets were in an artificially heated house, and had in winter a pen measuring 8 feet by 9, or about 7 square feet per bird. In summer they

had the run of a piece of land 12 feet by 48, that is 56 square feet per bird, and every three days they were allowed to roam in another piece of well shaded land measuring 75 feet by 75, where they had an abundance of green grass, insects, etc.

The tables show the details of the results for the first and second year.

10 Barred Plymouth Rocks Hatched May 5th to 20th, 1906, Slowly Developed, after three Months.

Hen No.	1907									1906	Eggs laid.	Remarks.
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Dec.		
9	.....	16	1	20	4	.....	.....	.....	.....	.....	41	First year.
10	4	5	12	12	10	.....	.....	.....	.....	.....	46	
12	.....	15	5	20	6	.....	1	5	.....	.....	52	
15	1	1	8	9	16	.....	6	6	.....	.....	47	
19	.....	.....	5	.....	13	.....	12	.....	5	.....	35	
25	.....	5	5	9	11	.....	2	3	2	.....	37	
32	8	7	15	14	12	5	8	1	.....	.....	70	
35	20	20	17	8	.....	12	3	14	.....	1	95	
66	.....	.....	.....	.....	10	.....	3	7	.....	.....	20	
78	8	15	9	12	.....	.....	11	13	6	.....	64	
Total.	41	84	77	104	82	17	37	49	13	1	505	Av.: 50½.

Same Birds as First Year.

Hen No.	1908										1907	Eggs laid.	Remarks.
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.		
9	.....	.....	14	6	.....	.....	.....	3	1	.....	.....	24	Dead 6-3-08.
10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
12	16	7	6	8	8	.....	.....	.....	.....	.....	12	57	
15	.....	.....	18	13	10	.....	.....	.....	.....	.....	.....	41	
19	17	14	12	9	2	.....	.....	.....	.....	.....	5	59	
25	.....	6	8	11	.....	.....	7	7	.....	.....	1	40	
32	4	7	15	15	7	7	7	.....	.....	3	1	64	
35	17	14	17	7	.....	14	10	7	.....	.....	17	103	
66	7	3	9	13	10	2	8	.....	.....	.....	5	57	
78	20	19	15	18	2	.....	15	5	1	.....	15	110	
Total.	81	70	114	98	39	23	47	22	2	3	56	555	Av. (for 9): 61.

Allow me now to put before you, some results obtained with birds of the same breed, same strain,, but hatched in the beginning of May, and which we shall compare with the results of the previous experiments.

In 1906-1907, 24 pullets, Barred Plymouth Rocks, wintered in cold poultry houses, gave an average of 68¾ eggs, of which the greater part were laid in winter. With 22 White Wyandottes, we got an average of 76¼.

18 Barred Plymouth Rock hens gave an average of 70 eggs, and 14 White Wyandottes an average of 104.

In 1907-1908, 19 Buff Orpington pullets gave an average of 92; 14 Barred Plymouth Rocks 85; and 10 Wyandottes 97.

As you can see, the egg production of early hatched and well developed birds, was from 20 to 60 eggs larger per hen.

Those experiments prove clearly, that by ridding our pens of every puny and delicate bird, and by early hatching, we could raise the egg production 100 per cent., and have at the same time a much better fowl for table use.

Aviculture is a most wonderful industry. The hen is a piece of delicate, extraordinary, fragile and complicated machinery. She possesses the marvellous property of converting the rough food into the most delicate and delicious products. But, like all fine and delicate machinery, she can be kept in good working order only by the greatest of care, close and intelligent attention to detail, and constant study on the part of the breeder and amateur.

It is a great mistake to start in the poultry industry without special knowledge, and certain failure awaits those who are not intellectually well equipped when entering into the business.

A certain amount of scientific knowledge is required to succeed in artificial incubation, in order to produce healthy and vigorous chicks, easy to rear, with good dispositions to rapid growth, so essential to success; to bring the young pullet to full and early maturity; to promote the laying propensities of the pullets at the most profitable season; to distinguish the laying hen from useless hen-house tenant, that we may be able to give our care and attention to the former only; to be able to pick out the hen whose organs are not overtaxed by the laying, and whose eggs will produce large and healthy strong chicks; to compound appropriate rations necessary to promote growth, laying, moult, fattening, so as to furnish the food elements required under those various conditions, without causing any prejudice to the delicate organism of the bird.

The poultry breeder and fancier should then try and acquire at least the elements of those sciences which have their application in poultry raising: Zoology, physiology, anatomy, physics, chemistry, veterinary science, etc.

In conclusion, I will say with E. Leroy, in the preface of his book, "Traité de la Poule Pratique:"

"Beware! Poultry raising is a most insidious undertaking. We start with the practical hen, we finish with the fancy bird. Practice often leads one by a natural bend to artistic breeding, artistic is no exaggeration, for a pure bred and faultless hen is a true, living work of art. Then, regardless of sacrifice and pain, you will hold it an honour to figure in the poultry shows, those peaceful battle-fields, which we sincerely hope will be the only battle-fields of the future. You will struggle to gain and wrest from the already crowned specialists the proffered reward, and help to hold flying in the breeze the beautiful flag of Aviculture.

Q.—How much each do these birds cost you to keep for the year?

A.—Just as much as the other, 85 cents. The bird that gives but few eggs costs just as much to keep as the bird that lays a number of eggs.

Q.—We would like to know how you pick out these good pullets?

A.—I would never keep for laying purposes a pullet that had not grown up normally. It is perfectly impossible to pick out a pullet from its appearance.

Q.—Do you believe that there is anything in the type of a bird?

A.—In many cases the birds we have at the Experimental Farm of the worst type give the most eggs.

Q.—Is there any similarity in type of good layers of all breeds?

A.—I am not prepared to answer that question. In our White Wyandotte and Barred Rocks or Buff Orpingtons, in one case last year a White Wyandotte laid 192 eggs. It was a small little bird that had more of the Plymouth Rock shape than Wyandotte. She was strong and healthy, but she had a bad shape. I have heard it said that a hen with a long body would lay more eggs than a hen with a short body, but this is not so.

Q.—What about the size of the comb?

A.—I put more importance on the size of the head.

Q.—Big head or small?

A.—Small head. As a rule, the hen with a big head is a lazy bird.

Q.—Do you find these short hens lay as big an egg as long hens?

A.—We weighed the eggs from that little pullet and from that hen; and from the little pullet the eggs weighed one pound ten ounces and the eggs from her sister weighed one pound eleven ounces.

Q.—Were they hatched in incubators?

A.—Yes.

Q.—Do you find any difference in the laying qualities of those hatched in incubators and those hatched by hens?

A.—No difference.

Q.—You lose more incubator chickens than you do hen hatched?

A.—We lose more in the incubator than under the hens.

Q.—Do you have as much trouble with the hens as you do incubators?

A.—No

Q.—Did you ever weigh this small hen?

A.—She weighed six pounds and three-quarters.

Q.—I would not call that a very small pullet?

A.—That is the weight. We raise them up to 7½ and 8½ pounds.

Q.—Which lays the biggest eggs, your Plymouth Rocks or your Wyandottes?

A.—All depends on the strain. Our Plymouth Rock eggs weigh about one pound ten ounces or eleven ounces per dozen, about the same as the Wyandotte, but I must admit that the White Wyandotte pullets lay a smaller egg for a certain length of time.

Q.—Do the pullets which begin to lay first usually lay the most?

A.—I did not carry on a special experiment in that, but I am satisfied the pullet that begins to lay in October or November will give more eggs.

Q.—Do you not find that full sisters will vary very much in laying qualities and the color of egg?

A.—We have had some breeds that would lay only 15 or 25 eggs in a year, and others lay 90, 120 and 175 eggs.

Q.—I do not understand how it is that these hens that do not lay any eggs cost as much to keep as the others?

A.—That is the reason why we should select our breeding stock.

Q.—Did your Wyandotte pullets lay a darker egg one day than another?

A.—Yes, there is a little difference in the color of the shell.

Q.—Did you ever notice that the color of the shell is influenced by feeding?

A.—We did not carry on any experiments in that.

Prof. Graham: In changing from feeding Ontario wheat to No. 1. hard Manitoba wheat, we had each hen's eggs lined up in the office for the purpose of seeing how many were laid, etc., and you could see the difference in the color of the egg the day we changed the feed.

Q.—Do you find that the hens that lay the largest number of eggs moult late?

A.—No; our birds moult in August and September. We find we can make pullets, hatched in June, moult in August and September, and our early pullets, hatched out in April or May, begin to lay in November, and they lay all the year round until the month of July and then moult through the hot months of the summer, and they are ready to lay next year in October, November or December.

Q.—Do you find that the hens that do not lay put on flesh instead of laying eggs?

A.—Yes.

PROFITABLE POULTRY FARMS.

By C. K. Graham, Hampton Agricultural Institute, Va.

I do not know how broad we can make this subject, but I think possibly it is wise to make the introduction broad enough, so that we can get away from it a little bit, and I would like to say that one or two questions that were asked previous speakers have given me a chance to introduce some things I would like to explain.

I will talk chiefly of the State of Connecticut where I was in the poultry work. There I consider the climate and the temperature about what it is in St. Catharines. We have had it as low as three or four below zero in four years. It very seldom goes below twenty above zero: Once in a while it drops to ten above. We have sleighing probably two or three times throughout the year. It would be the exception to find over one or two cutters sold in a year in a city the size of Guelph.

Q.—Is it just as hard to get eggs in November, from your hens in Virginia as it is in Canada?

A.—In Virginia, we find things altogether different. The coldest day we had in Virginia was a week ago last Sunday, and it was just about like last Sunday here; the temperature was 26 above. We are right on the seashore. The land is low in the section I am in, and the poultryman there wants to hatch his chickens now so that he can have them fairly started before the hot weather of May reaches us. In fact most of his chickens are hatched, and the problem we have to face there is that these chickens are going to lay in August, and I cannot see how they are going to help moulting early in the fall.

In Connecticut, we have to be careful not to get February or early March hatched chickens. We want our chickens hatched between the 15th of March and April. Our friends from Ottawa speaks of the cold climate being a disadvantage—you people here are wonderfully blest with climate. Do not forget that when you get further south, you are wonderfully blest with other things beside climate. The lice will breed faster than you can kill them. Anything in the line of parasites is with you always. We find also, that we have what you call roup in abundance. In Virginia, I found they kept every window in the house closed tight. Naturally we use colored men and the colored man likes everything warm, and he shuts the windows up tight in the middle of September, and their roosting coop are very small. I find nearly every person who keeps chickens keeps them shut up in that way.

In New England, I found two or three peculiarities. One is that they had the gapes in one-half of Connecticut and in the other half they had never known of the gapes. The Connecticut River runs down through the State, and I have never seen a case of the gapes east of that river, and west of the river there is plenty of it.

You have been speaking of tuberculosis. If we have it, we do not know it. We have low vitality and lots of our chickens die. I think our percentage of culls is as high as yours, but the only case of tuberculosis our people have been able to find is a case in the western part of the State. One of the breeders saw some of his chickens with two or three ulcers under the wing and on the thigh. I sent it to a noted chicken doctor and he telephoned and said it was a straight case of tuberculosis; he had been able to find the germ. And a day or two ofter we got another and I went out to the man's place to see what was the matter. He was a thrifty German and had Silver Laced Wyandottes. He had a nephew who came from the city of New York in the last stages of consumption. They told him it would be a good thing for him to get out in a poultry plant. He had been expectorating in that poultry plant, and that we think is how that chicken contracted the disease. I think there is no doubt whatever there was a case of tuberculosis simply from coming in contact with the excreta of that man.

Another trouble we have had is what we call chickenpox. I remember one case in particular where a flock was all broken up by the disease, and on investigation, we found that it could be traced to a German servant girl who had the disease. It was in the fall of the year, and they thought it was roup. Happening to look at the girl the doctor saw a sore on her face and taking a scab from the sore, he produced the same toxemes that we were producing from the chickens. The birds contracted it from the fact that she had eaten some watermelon, and had thrown the rind over the fence to the chickens.

In Connecticut the people keep poultry as you keep cows. It is the main industry of the State. I suppose there are more people keeping poultry for a living in the State of Connecticut than there are in any of the other branches of agriculture. Some of them are fanciers, others utility. Very few of the utility men have any use for the fanciers, and yet I firmly believe if it were not for the fanciers they would go to pieces. The average man who is in the poultry business there, and who went in to it purely with the utility idea, really has no love for the chicken and does not appreciate them and does not know their good points; he is unable to tell a good healthy bird when he sees one, and the result is that in two or three years he is out of the business. He will follow up every idea that anybody suggests. But when we get hold of a good fancier, and turn him into a utility man, he is a stayer, he knows the value of the bird, and he does not have to take other people's advice.

We have the soft roaster trade and the broiler trade and the egg business and by no means least, the squab business. However, there are very few left in either the squab or the broiler business. When I went in there, the State was full of the latter. I do not think that even down in Virginia there are broilers being grown to any extent to-day. They have practically given it up. I do not think the incubator men have boomed the broiler business the last few years as they formerly did. Most men who took up the broiler business started in after reading incubator catalogues.

Q.—What is the matter with the broiler business?

A.—I will tell you what I think. It is one of the get-rich-quick schemes. It looks easy to turn money over rapidly, and if you do not stop

to inquire the cost, it is all right. But I am satisfied that one of the greatest leaks we have in that business is the amount of money we tie up in the equipment—the amount of capital required which lies idle seven months in the year. On the other hand, in our State practically the only time you can sell broilers to make any profit is in May, and that means a March chicken and February egg, and I cannot understand any man trying to hatch a February egg in order to double his money when he can get double the cost of the egg by selling it right on the spot.

Q.—What do you get for broilers?

A.—An average of 75 cents or 80 cents a pair. Once in a while you can find a man who peddles them out who can get as high as $1.25 a pair.

Q.—What is the price of eggs in February?

A.—35 cents to 45 cents.

Q.—How many broilers will a dozen eggs turn out?

A.—It takes four eggs to make a chicken.

Q.—Is that where the loss is?

A.—Yes, you have eggs that cost you at least three cents apiece to begin with, but don't forget that equipment which is depreciating in value daily.

Q.—When you hatch under the hen do you not get one chicken for every two eggs?

Mr. Robinson: I figure on getting ten liveable chickens out of 15 eggs.

Q.—How many hens could you set in the season?

A.—About twenty.

Q.—How many eggs under each hen?

A.—Nine, this time of the year; eleven when it gets milder, and thirteen in the warm weather.

Q.—Out of 230 eggs set, how many chicks will you hatch?

A.—I would get about 180 to 200.

The Chairman: I set 200 eggs in incubators and out of over 100 fertile I got 66 chicks. I cannot do it now, and I want to know why?

Mr. McGrew: In the case of a man who is hatching five or six thousand chicks to get two thousand layers, what is he going to do with the cockerels?

Mr. Graham: He has got to work them off, and of course the quicker he can sell the better. There is a difference between the farmer and the broiler man. The farmer goes to the city and takes what margin he can get. The poultry man is a man who understands his business, and he knows what his product is worth. I wish we could find more farmers who knew what it cost to feed a hen, and how many eggs they could get from a hen in a year. If you ask them what a pullet cost them, they do not know. They do not know whether they can replace a pullet with the money they get for the bird they sell. In this case the cockerel is a by product or should be considered such.

The Chairman: A man is running a poultry farm, and he wants to produce a certain breed of layers; would it pay him to turn off his cockerels for broilers?

A.—He will have to.

Down in Connecticut, we have two distinct plants, the intensive and extensive plants. One man keeps from fifty to one hundred birds per acre. Land in Connecticut is cheap. You can buy plenty of it from five to fifteen dollars per acre. You have the best of markets. You can get to either New York or Boston in four hours, so that they not only have every convenience

as far as markets are concerned, but the State is flooded with would-be poultrymen and there are therefore always readymade plants for sale. There are however a great many down there who have made a decided success, and with a few exceptions every one of these successful men have what I call the extensive plants. They use lots of ground; have a large, free, range; cutting labor down to a minimum.

Probably the most successful plant we have there is that of Mr. Tillinghast. He has in all about 3,500 birds, and last year he and his daughter ran the plant. The year before they kept a student. They fed the birds once a week, and never water them. A stream runs through the centre of the farm and the birds go to that stream, and when the snow is on the ground, they eat snow. At one time, he used wheat screenings, but he feeds straight wheat and corn now. He told me he kept no books. He had so much money last year, had more this year than last, and he was satisfied. However, that is all talk. I know that out of his 3,500 hens, he made better than $3,500, after allowing himself fifteen dollars a week, and his daughter ten dollars a week for living. And he charged up 5 per cent. for interest on investment and 10 per cent. on stock and 20 per cent. on equipment. He claims that equipment will go to pieces in five years. At the end of five years, he wipes his houses off the sheet, i.e., charges nothing for depreciation after that time.

Q.—How often does he clean these houses?

A.—Some of them have not been cleaned since I have been in Connecticut, four years. His houses are cheap. They are eight feet by sixteen feet and some ten feet by twenty feet. They are four feet high on the side; that gives them a roof of five feet three inches. He uses cypress lumber for the roof. He can get it for about $28 per thousand. He uses pine on the sides and pine on the ends. He builds his houses low, so that they will go under the trees. What seems strange is the vigor of the birds, and the hatches he can get; all your theory of cleanliness and fresh air hygiene are all gone.

Q.—Does he whitewash his houses?

A.—No, and he has not lice. I have heard him say he uses Blue Ointment, but I do not think he does.

One year he had a great deal of trouble with his chicks. Since then they are hatched in incubators, and he raises them under hens.

He has a theory that a good healthy hen won't have any lice on her. She will fight them off. He works on the theory that a hen must be contented to give best results. If you want a man to give you results, he must be satisfied with his position, because if he is not, he will be grumbling instead of doing his work. If you put a hen behind a fence, she will spend most of her time walking around to see through the fence. He claims that none of us know what the hen should have to eat, but that if we will give her free range, and a chance to clean herself, she will get all the variety she requires, if we put out a certain amount of wheat or corn for her.

The question is often discussed as to whether we give our hens too much grain, and whether it would not be better to give them more roughage. There is a point where the hen seems to be unprofitable owing to excessive labor and feed. A man I know who has a plant in Virginia keeps his hens out on an alfalfa field, on free range. They were yarded when I went there, clover was given to them, and ground bone brought to them. Now they have their hens out on alfalfa and are getting good results.

Q.—What percentage.

A.—I cannot tell you. We put three coops out on the field last year and the birds are all living yet and laying. There are 150 birds in this lot.

and we are now getting this month about 80 eggs a day; but I do not know what they did last month, nor what the other 1,000 did.

Q.—That man that has chickens and only feeds them once a week, does he put the feed in a box, and let them eat when they want to?

A.—Yes, puts the feed in boxes. He was feeding wheat screenings, but the food got so poor he began feeding wheat. His birds are all Leghorns. We had our doubts about this method and we built three houses just like this, and put them out on sheep pasture, and we took two more houses and put them on the other side in a marsh. We put Rhode Island Reds there because we had not enough Leghorns to fill the five houses. The first year the cost, not including labor, but including feed and interest on investment, was 7 3-8 cents per dozen eggs. From the Reds we got 109 or 111 per hen.

Q.—What did you pay for the feed?

A.—I think about $1.35 per 100 lbs.

Q.—Did you clean these houses?

A.—No, we did not. There are no dropping boards in our houses, most of us do without dropping boards in the State of Connecticut.

Q.—Are you advising farmers to keep hens that way?

A.—Yes, I am advising them to cut down the labor. Keep more hens and put less money in buildings and equipment. I advise him not to make himself a slave to the hen but let the hen work for him. During murky weather, if there has been a frost and it begins to thaw, we sprinkle land plaster on the manure. We cleaned these houses once a year and there was no foul odor and no great lot of manure.

The eggs from the Leghorns cost us 7 5-8 cents a dozen. Referring to the Rhode Island Reds, we had the mothers that had been kept in a warm house the year before in one house and in the other house we had their daughters. The eggs from the Reds cost us 7 3-8 cents. There was a difference of 2-8 cents in the cost of the eggs from Reds and from the Leghorns. The eggs from the old hens cost us about 16 cents, or nearly three times as much as the eggs from the pullets. I am sorry to say we had no trap nests in either of these houses. I would like to know whether there were just one or two old hens there, that did not lay.

We had no running brook but there was water four hundred yards from some of the houses. That winter we had snow one week and the next week none at all and the ground would be frozen solid. We did not bother carrying any water to the hens; we just let them go and the egg production was not noticeably effected. We carried nothing to them but wheat screenings, beef scrap. Shortly after that my brother and I went to Rhode Island, and we found them using hens to rear chicks. They put the hen in a coop and put the water where she could not get any, claiming that if she got any water she would start to lay earlier, but that by giving her mash she was satisfied and would not lay so quickly.

When I came back, we cooped up these hens to see if we could keep them without water, and the minute we tried it they went down in egg production. But the next winter when we tried the same thing, there was practically no difference in the egg production from the hens whether they got water or not. The cold weather seemed to take the place of the water to some extent.

Cost of Buildings.

We took a census of the State. We sent copies of the records we wanted each man to keep so that we could get his egg production and his

expenditure. We got him to keep a stock sheet and we put on our own valuation taking the state over. There were 117 men in the Association at that time who sent in reports, and the average was a little better than $10.00 per hen tied up in equipment. That did not include real estate; just buildings, incubators and brooders, trap nests, etc. It left them $10 per hen tied up. We figure a hen is worth $1.00, so that with a $11.00 investment, we must have a net profit of $1.10 or 10 per cent. besides pay for feed and labor to get your money back. We have been trying as hard as we can to get people out of that and to have houses that would cost $1 a hen and to do away with the incubator and brooder. Of course, it cannot be done with the Leghorn, and for that reason they are going into breeding Reds. Another strange thing is that our Reds weigh 1¼ pounds more than our Leghorns, and yet we can feed the Red as cheaply as we can feed the Leghorns; we can keep a four pound Red for the year as cheaply as we can the three pound Leghorn.

Q.—What is the amount per hen tied up in equipment?

A.—$10 per hen.

Q.—How much has Tillinghast got tied up per hen?

A.—Less than 25 cents.

Q.—What did he do with his brooders?

A.—They are mostly gone. He has a cheap brooder that cost him $1.25 to $1.50.

Mr. Gammack's plant is extremely clean. He is really not a grower of poultry. He is more of a dealer. His father was an Episcopal minister who looked after an aristocratic congregation in Hartford, and this boy got raising chickens, and the people bought them. His business began to grow, and they could not get chickens enough to supply the trade, and they had to buy.

He has a long house built up on stilts. He bought packing cases for 25 cents and added to the building. It is one continuous addition. He got an egg here and there and hatched it. They went on for a few years till he got an incubator, and then his chicks got the white diarrhoea and he could not do anything. In the last two or three years, he has been buying most of his stock. His trade is dressed poultry and eggs, although he keeps about 1,000 laying hens and raises annually about 1,000 chicks. He has a demand for good eggs, and has the happy faculty of making everything look good when it comes to him, no matter what it is. He thoroughly understands dressing birds, and he puts them out in fine shape, and he gets the price. I have never known him get less than 40 cents a dozen for eggs. He says he never lost a dollar in bad debts. He is now thirty-five years of age. He has seven acres of land, which is valued at $2,500 by the tax collector. He has about 1,000 birds. He has built a house in which he lives with his mother and father, and he keeps two horses and a couple of rigs. He is now changing his business from a poultry grower into a poultry dealer, i.e., the latter side is growing but the former is not going down. He is making money and is considered one of Connecticut's most prosperous poultry men.

There has been so much talk about co-operative work, I thought it would be a good thing if we could get Mr. Gammack's business into the Connecticut Poultry Association. He found that it was very hard to get men that he could depend upon. They would be a little careless and put some dirty eggs into a package, or they would send him some chickens he could not use. They have a trick, in Connecticut, of giving hens a big feed of mash, five or six hours before they were going to kill her. Most of

it has gone from the crop, but it is all in the intestines and Gammack found that class of stuff coming to him, and he either had to attend to it personally or else get out of the business, and now he has only fifteen or twenty people from whom he buys poultry. Down there, as here, it is eggs first, and when the spring comes on and the people want roasters, you cannot get them to kill poultry. They feel that they must have eggs. There is room for a roaster business. Mr. Gammack thinks the people would be willing to pay for the goods. When he dresses the birds, he charges five cents a pound for doing the work. He puts some birds up ready to be fricaseed. He weighs them up alive; he does not weigh them after the feathers have been taken off.

Another man down there who has had a decided success with poultry is Cosgrave. His wife says she used to ache to get out on the earth. She says she felt if she could only get out in the parks and sit down in the grass she would feel fresher. She said she was "drying up" in the city. They moved out on the farm when he was fifty-one; he had never lived in the country. They bought the place with $70. That was all the money they had. They agreed to pay $550. The farm included a cow. They landed there at night and they did not know how to milk the cow and had to get a neighbour to do it for them. That night he bought three cows on credit. The man who sold them had fed them as long as he could afford to keep them. There were a few chickens on the farm and from these they got a few eggs. However, he managed to raise $50 to buy chickens and that was his start. He soon sold the cows. He got all the old boards he could find and started building coops. Last year Mr. Cosgrave was a member of the Legislature and chairman of the Agricultural committee. He is now seventy-two or seventy-three, and he is without doubt the leader in agricultural questions in the State of Connecticut. He is a man to whom everybody looks for advice. He owns sixty acres of land, and has a good home. He has educated three grandchildren, and I do not know where there is a more happy couple than Mr. and Mrs. Cosgrave, of Willington, Conn. I think I would be safe in saying he has got $5,000 in the bank and possibly more. He has never retailed a thing in his life, and he told me that he never killed a chicken. His wife kills them when there is any to be killed. He ships everything alive to New York, and he grows as nice broilers as I ever saw. He keeps one or two cows and feeds the chickens the milk. He buys stale cracker crumbs and stale bread by the barrel. He is a great feeder of sprouted oats.

Q.—What does he have to pay for that bread?

A.—I think a cent a pound.

Q.—He has made all you say out of chickens?

A.—Yes, he never had an incubator or brooder.

Q.—Did his poultry ever have white diarrhoea?

A.—Never, he does not know much about sick chickens.

Q.—How many chickens has he got?

A.—Five hundred laying hens. That is all he will keep.

Q.—How many chickens will he raise?

A.—He changes his stock every year, just keeps a few hens for hatching next year. He believes he can grow pullets for seventy cents, and he can sell his hens for a dollar.

Q.—How many eggs does it take to make a chicken with him?

A.—I do not know, but I know it does not take anything like as many as it does with the rest of us. His poultry are kept upon a hill in a low

lean-to shanty. He puts a few colony houses out in the spring. He believes in letting them have range, and bring them up again in the fall.

We have one other man that I think we should mention. He is a lawyer and real estate man, and he keeps chickens to sell the real estate. He will buy a corner lot in New Haven, and cut down the weeds and clean it up and put a chicken coop in and lock them up and let them run out on the lot. His idea is to improve the lot by the chickens, and incidentally to advertise. He is a breeder of Light Bramahs. He told me that chickens have been the best paying investment he has ever had. I think he would be a man well worth bringing here. His name is Geo. V. Smith. He handles poultry as a by-product, and just there is one of the big things that helps out our small poultrymen in Connecticut. I advise the farmer not to work for the hens, but to make the hens work for him. We do not pay enough attention to the by-product. He puts land plaster on the dropping and hauls them out and spreads them in the furrow after he has plowed the land, and puts his strawberry plants in the same furrow, and he gets magnificient crops. I could name many other successful poultry men, among them two leading manufacturers both good business men, and they are making big money. There are fanciers down there who are also making money. The few that are left in the fancy business are having their stock hatched and raised by farmers.

Q.—Tell us about that woman who crate-fattens her broilers.

There is a woman down there who puts birds up for ten days just before they are ready for the market as broilers. She keeps them on their range and then brings them in and crate feeds them for ten days.

Q.—Do you think the climate in Canada is any detriment to egg production?

A.—I think we can get more eggs in winter than you can. I do not think there is any doubt about that.

Q.—How about the twelve months' production?

A.—I can get more eggs when they bring high prices than you can, I am not prepared to say that the winter egg is a profitable egg. Mr. Tillinghast gets no eggs in winter, and he does not want them. He could not get them with his system. I think your yearly production would be as large as ours. I think the cold weather helps you.

Q.—You told me of an experiment that you made with hens that were brooding and others that you let set and bring out a brood?

A.—Yes, hens that we let set and hatch broods, quite often laid more eggs during the year than did the hens that we broke up. Not only that, but the next year we got more eggs from the hens that we permitted to set, and they hatched better and gave stronger chickens than did the hens that we broke up. It seems that the natural rest the hen got did them a world of good. We don't let them rear the chickens. They were really brooding about four weeks. The other hens we simply put out in a field for a day or two.

Q.—You made some experiment giving hens cold water and warm water?

A.—We fed snow to the hens one winter and everybody said we were cruel, and so the next year we tested it and we gave to one pen cold water and to another pen warm water and to a third snow, and there was very little difference in the egg production or the vitality of the chickens that were hatched from the hens that had cold water or the hens that had snow, but there was an enormous drop in the vitality of the hens that had

warm water. And there was a larger death rate among the chicks. That was only one year's work, and we did not get a chance to repeat it.

Q.—Does it make any difference whether you give them cold water or snow?

A.—No; the only difference is that we do not have any freezing of the wattles where they get snow. I would never go after water where I could get snow.

The Chairman: We have had a very practical address from Mr. Graham. One or two points interested me particularly. One was the question of the dropping board. I have come to just about the same conclusion as he has. I have a combination of a brooding house and a place to keep surplus stock. In the fall of the year, I convert it into pens. I have dropping boards in that house hinged so that when I want to convert it into a coop the dropping board is put back out of the way. This winter I hinged up one of the dropping boards in one of the houses, and I continually go to the house to see how bad it is getting. I have not cleaned it out for a month, and it is not looking any dirtier to-day than the day they started to use it. Of course the birds simply cover up the droppings by scratching on the floor.

The Chairman: A great many people learn a great deal more by what they see than by what they hear. They will believe their eyes when they won't believe their ears, and Mr. Graham is very kindly going to prove to us through our eyes what he attempted to do through our ears. He is going to give us an illustrated address and speak to us on his practical work.

ILLUSTRATED ADDRESS

By C. K. Graham, Hampton, Va.

Besides bringing with me slides showing many types of poultry houses that were mentioned in this afternoon's talk, I have also several views of the Hampton Normal and Agricultural Institute, Hampton, Virginia, where I now have charge of the Agricultural Department. This institution is often mentioned as the one which educated or trained Booker T. Washington, of Tuskegee, but I think it is unfair to the institution to say he is the only great man they have ever turned out, although there is no doubt he is one of the greatest if not *the* greatest.

We have at the institution at this time about 1,300 students, starting with the kindergarten and going as high as two years of your college work. The school is divided into two parts,—a day school or what is known as the Whittier School, which takes the students from the kindergarten up through the ordinary grammar school, and also furnishes students for our normal school training. The Institute proper has an attendance of about 800—500 boys and 300 girls—all boarders. I often wonder what would happen if we undertook to make the students at such a College as yours work as long hours, and keep them as busy, as we do the boys and girls at Hampton. For example, they are called at 5.30 in the morning, have breakfast at 6, are obliged to have their beds made and rooms cleaned and get to the classroom by 6:30 where they are kept until 7:30. They then have a half hour in which to change their clothes and get ready for work, for at Hampton every boy and girl works. Our method is "Learning by doing."

The Agricultural and Trade School students work from 8 until 5 in the afternoon with the exception of two hours in the middle of the day

when some of them have lectures relative to the work they have had during the day. For instance, the boys working in the barn have an hour a day with the dairyman; those working on the farm have an hour a day in agronomy, but these boys are transferred at certain periods from one branch of agriculture to another. The term is three years with no vacations during the thirty-two months they are with us so far as work is concerned. Of course, we have no classes during the hot months.

All the boys and girls have from 5 until 6 o'clock to themselves; i.e., any subjects taken up during that hour are purely elective. This includes band practice, choir practice and athletics. At 6 o'clock they have supper and from the dining hall march into chapel for prayers. They then get about ten minutes' rest between prayers and night school which begins at 7 o'clock and lasts until 9. Every student is required to attend night school. Fearing that the boys may get a little dull from lack of work we give them calisthenics two nights a week from 9 until 9.30 under electric lights, and everybody is in bed at 9.45.

I simply mention this so that when you hear a boy at the Ontario College complaining about being over-worked I think it would be well for you to think of Hampton before saying very much.

What seems strange about this is that we very seldom have a student break down. The regular habits and steady work seems to be the reason why every boy goes out a stronger man than when he came into the school. They have the best of care, everything is kept as clean as possible, and they are under the supervision of resident physicians.

Mr. Graham then exhibited a number of excellent lantern slides of Hampton work, after which he exhibited views and discussed the leading types of poultry houses of the South.

Q.—That building for a city lot, what is it constructed of?

A.—We cover the boards with Paroid.

Q.—Would that do in this country?

A.—Yes, I think it would, you could have curtains to drop down in the winter.

Q.—What size is that building?

A.—6½ by 16 feet.

Q.—Will you give us your best idea for a poultry house for Canada?

A.—If I were going into business up here I would build a house similar to Tillinghast's; just a colony house, 8 by 16 feet facing the south 4 feet sides and a peak roof.

Q.—Divided in the middle?

A.—No division in it; no scratching shed.

Q.—No protection of the roosting house?

A.—No.

Q.—How many birds would you keep in that house?

A.—We keep only thirty, we put no litter in this house; many keep as high as fifty.

Q.—How do you like a house where the birds roost up high, similar to the Tollman house?

A.—I do not like them.

Q.—Would you put scratching litter in that house in this country?

A.—I think I would.

Q.—Cannot you have these houses so that you can move them?

A.—Yes, we move ours, we use a yoke of oxen and a stone-boat, or what the Yankee calls a drag.

Q.—In using that house, you would not go in for winter egg production?

A.—No, I am not prepared to say winter egg production is the most profitable.

Q.—How many birds would you put on an acre of good land?

A.—You can put 200. I think if the farmers would run 200 hens to an acre through the Brighton and Colborne section it would be a good thing for the fruit growers.

Q.—Would that be as good as hogs?

A.—I do not know anything about hogs.

Q.—Would you use incubators?

A.—I think you will have to.

Q.—How do you operate them: do you use incubators?

A.—We use incubators, and we use brooders, but to counteract the harm we get from that incubator and brooder, we give them abundance of free range. If I were going to hire a person for office work, and I wanted lots of hard work, I would take that man or girl from the country every time. I would take a farmer's son or daughter, because I know they can stand more hard work and work longer hours, and do it with more pleasure than a city boy or girl. Look at the leaders in the financial world.

Q.—Do you think a boy or girl from the country will do more work than a boy or girl from the city?

A.—Yes, I think they will. With poultry we get a new generation every year. In ten years with poultry we accomplish what it would take two or three centuries to accomplish with human beings. That is as good a reason as we can give for a lot of people going into the poultry business and in about five years going "up in the air," for they have got where we might get with a nation in a century and a half.

ADDRESS.

By G. A. Putnam, Toronto.

I am glad to be with you this morning, and trust that we may be able to get some profit from a consideration of the work of Farmers' Institutes. The work of this organization in the first years of its existence was largely done by Agricultural College men, and only one or two meetings were held in each of the counties each year. The result was very large meetings. Subjects of interest to the general farmer were considered and the people looked for and were furnished with entertainment as well. The day of entertaining has largely passed, and we try now to make even the night meetings instructive rather than a source of amusement. The time came, as the Institutes expanded, when it was impossible to get College men to attend nearly all the meetings. Formerly there was a long vacation allowed at the College extending from about the 15th of December to the 20th of January, in order that the members of the staff might give instruction along agricultural lines at the Institute meetings. But that was found impracticable in a few years, and we had to rely upon the farmers who were following practical work throughout the year upon their own farms to do the lecturing at the institutes.

Sometimes I think it might be well to postpone further experimental work at the College and devote all our energies throughout the country to giving the people the benefit of the information which we already have. If we could only get the average farmer to follow the approved methods

which we know to be sound we would have accomplished a great work. If we could only induce the poultrymen, the fruitmen, the dairymen, as well as the men who are following mixed farming to introduce those methods which have the approval of all successful farmers, we would, I believe, have done the greatest service to the farmers of Ontario.

For the first few years the general Institute work embraced all sorts of subjects bearing upon farming, and their number as you know is great. That is true to-day also, so far as the great majority of the work is concerned, but the work is fast developing along the line of special Institutes. We have our special fruit Institute meetings, lasting two or three days in one centre, and a definite programme for every hour from say 9 to 4 or 5 o'clock, is announced, with an evening session on one day. We adhere to the one subject and thresh it out to a conclusion. The fruit men go to the meeting knowing just what they will get in the morning and what they will be given in the afternoon, and the whole day is spent in a profitable way. At the end of two or three days they go away realizing that they have received something of real benefit. They have definite information upon lines of fruit growing of special value to the locality, and are inspired and encouraged and take a new interest in their vocation.

The same thing is true of instruction in the judging of live-stock, and it is extending to poultry lines as well. We have held a few poultry Institutes somewhat similar to the one you are now holding here, but not so extensive. We held a few last winter in Morrisburg, Perth, Leamington and other places. In addition to that we are having special poultry meetings in connection with the poultry shows. As you know, we have a great many local poultry associations throughout the Province. These associations are now required to have lectures in connection with their shows, in order to secure the Government grant. We send out speakers such as Mr. L. H. Baldwin, Miss M. Yates, Prof. Graham and Mr. Geo. Robertson. We think this work is destined to grow extensively.

The officers of the Farmers' Institutes throughout the Province do not often ask for speakers upon poultry topics for the regular Institute meetings. We believe this is a mistake on the part of farmers. The average farmer can make as much profit out of his hens for the money invested and the work involved as in any other line of farming, and it is, therefore, a topic which should be taken up at the regular Institutes. It is *profit* we are after, whether we are working in the dairy, with the poultry or along some other line.

In taking a canvass of Eastern Ontario we were surprised to find that the average production of the cows was only 2,700 pounds during the factory season. This represents a return of about twenty-seven dollars in a good year such as 1908. I do not think you will find many farmers who will admit that they can keep a cow throughout the year for less than $25. $2 profit during the factory season and the little additional profit after the factory season is over or before it begins in the spring, is not enough; and I venture to say that many dairymen are not making as much profit out of their cows as they would make out of an average flock of hens. I think it can be shown that a farmer can keep from sixty to seventy, or it may be a hundred hens at a considerable profit. I do not know that it is wise upon this occasion to speak of the poultrymen who is making a specialty of poultry. We cannot point to many men who have gone into poultry raising as a specialty who have made a success of it. I believe you have to look to the average farmer for profit in the poultry business; and by average farmer I mean one who does not keep more than 100 hens

on the average farm. Up to that number, I believe a farmer can make very substantial profit because there is a great read of refuse on the farm that can best be used for feeding poultry. Then the son, daughter, or wife upon the farm generally takes pride and enjoyment out of looking after the poultry, especially if their receipts are not confiscated by the head of the family. They will never notice the extra labor that is involved, and you know what a little additional cash means on the farm. A very large percentage of the income from poultry on the farm can be put down as profit, and I only wish we could induce all our farmers to keep a limited number of poultry and follow more up-to-date and uniform methods.

May I draw a comparison between poultry raising and grain growing. I believe if the average farmer would take ten acres of wheat or oats or any other general farm crop and reckon the interest on the investment, the cost of seed, the labor involved, the plowing, harrowing, sowing, harvesting, threshing, marketing, etc., and compare the results with the net returns from a flock of hens, he would find that there is much more profit in the hens. He would have greater net returns from the hens than he would from his field of grain.

Up in South Simcoe they are following the old method of summer fallowing. One of my Institute workers, Mr. John Campbell of Woodville, when through that section in January last, took the opportunity of making a very careful estimate of the cost of producing ten acres of grain, and he proved conclusively to the men of the locality that if they were allowed a reasonable wage for the labour involved, paid the market price for their seed and allowed a rental for the land, they were actually losing money in producing wheat. We could hardly induce one of these farmers to put the same energy, time, or care into looking after poultry, still if he would do it he would be a substantial gainer. Mr. Adam Armstrong, one of the many good farmers near Fergus, related to Mr. Campbell last week that he bought a bird from one of his neighbours, used a little intelligence in the feeding, took it to the Ottawa show, and sold it along with the rest of the birds he had on exhibition at twenty-five cents a pound. The hotel he sold it to was very glad to get the poultry at that price and were prepared to buy large quantities of superior fowl at the same price. The fowl had been well fed and nicely dressed.

Q.—What kind of a bird was it?

A.—Plymouth Rock. That shows you what can be done upon the average farm by using a little intelligence and care.

May I repeat that I believe it would be time well spent to devote a portion of the time of the Institute meetings in advocating poultry and egg production, but we cannot look for any marked increase in the attention to be given to poultry matters at regular institute meetings at the present time. It would be well to make an effort to induce farmers in different sections to take up the poultry question, and it will be my aim to pay a little more attention to this subject in the general Institute work, and to make an effort to get certain sections of the country to go into poultry raising more extensively and upon a uniform basis. The fathers or mothers cannot do better by their sons and daughters than to induce them to take up poultry keeping and to give them some assistance in making a start. What better training could a boy have than to be given the responsibility of some branch of the farm, and what is more interesting to him, or what could he handle better, than a flock of chickens? As a training for the boy in business methods, industry, and attention to details, it is a subject which should be given greater prominence.

We arrange our poultry Institutes the same as you do here. Definite announcements are made for certain hours of the day, and we send good speakers to deal with the subjects announced, to induce those in attendance to ask questions. The speakers are supposed to inquire into local conditions, and to study the interests of the people as far as possible. In all Institute work you must know what the people in the locality are doing in the line under consideration, and the speakers must size up the situation and decide for themselves what will be of greatest value to the people.

Several speakers have attended poultry shows for the purpose of giving lectures. Poultrymen are very enthusiastic exhibitors. They are so careful of their birds that they do not like to leave them, to listen to lecturers. In some localities, however, we have succeeded in getting large audiences to attend the lectures upon poultry topics at the time the show is held. We believe, however, that better results would follow if meetings were held at some other time.

In the Women's Institute we are doing good work along poultry lines. Lecturers upon poultry topics are often asked for at Women's Institute meetings. The women are taking an intelligent interest in this subject and we are hearing from time to time of the good results of the work.

Some acquaintances of mine living eight or ten miles from the city of Toronto, have, for the last two or three years been co-operating in marketing poultry, and other farm produce in the city of Toronto. They sell most of their product direct to a good grocer, and get from three to four cents a dozen more than the average man for their eggs. They stamp their eggs and bring them in regularly, with the result that each of these three brothers require to make a trip only once for every three times that their eggs are marketed. They have been unable to induce their neighbors to co-operate. The larger the number who co-operate and the greater the quantity of high class product we can place on the market from the one locality, the more certain we are to establish a profitable market.

The day is past when the farmer says to himself, "I have something good and I will keep it to myself. I won't let John Jones know that I have the best seed grain or the best poultry, or the best producing cow." Farmers are beginning to realize that it is to their interests to see that their neighbors are producing as good stuff as they are. We must look to greater co-operation along poultry as well as other lines; and in order that co-operation may be successful we must have some sort of local organization. We can with profit deal with the subject of local organizations for a few minutes this morning. You may call these organizations "Farmers' Institute Clubs" or by some other name; I care not what you call them, so long as the farmers of the locality will come together and discuss their local conditions applying the information which may be gathered in such large quantities from the reports and bulletins from the College, other Departmental reports, the Agricultural Press, and often through the local Press. If the farmers would come together for the discussion of those lines of agriculture which are of importance in the locality, make a local application of the knowledge obtainable, and have free discussions, it would be of inestimable value to them.

A year ago last June I met with the Specialists in Agriculture who were appointed at that time to take charge of the Agricultural educational work in high schools and investigations along agricultural lines in different sections of the Province. I said to them: "It appears to me that if you will make an effort to induce the farmers in your territory to form local clubs for the purpose of coming together occasionally and discussing local

conditions you will have a means whereby you can work not with the individual but with a body of men." They did not take it up very enthusiastically at first, but none of us were sanguine as to the wisdom of this line of procedure at that time. Some of them have recently devoted a good deal of attention to this line of work. Mr. Hart of Waterloo County is now spending considerable of his time in visiting the clubs already formed and in organizing additional clubs. Mr. Winslow of Prince Edward County has twelve local clubs organized. I asked him what he thought of these local clubs as a means of education. "Why!" he said, "I do not think there is anything better; it is a hundred per cent. better than the ordinary Farmers' Institute meetings." Through these local clubs the farmers come together and discuss local conditions, and exchange experiences from time to time. Some of them hold meetings every two or three weeks, and in some localities even once a week. Mr. Winslow reports that in Prince Edward you cannot announce a club meeting but you will have visitors from adjoining clubs to see if they cannot get something to take back to their own organizations. They are considering in some of the clubs the matter of co-operating in the purchase of supplies, such as spraying materials, seeds, implements and other things which can be bought in quantity to advantage.

In the establishment of these local clubs we get the farmers of the locality to come together and discuss the advisability of forming a club, and if thought favorably of, organization is at once proceeded with. It is essential that you get some man who is a moving spirit in the locality, to take an active interest in it. You need men who will devote some time and thought to the work before you can hope to make it successful. It is of great importance that you get the right men for officers. If there is one thing I try to impress upon Institute lecturers, it is that they use discretion in getting good officers for these clubs, for the very life of the organization will depend largely upon this.

The assistance which the department renders to these clubs is dependent upon two or three things; they must hold five meetings throughout the year, and must have a membership of at least twenty-five members, twelve of whom must also belong to the riding Farmers' Institute, before they can look for a special speaker from the Department. It is only a matter of twenty-five cents to join the Farmers' Institute, and if a farmer is not prepared to pay this amount to belong to the Institute and receive reports issued by the Department of Agriculture, he is not very deeply interested in his business. The fee for the local club is set by the members and is in accordance with the needs of the organization.

I might venture to say just a few words along practical poultry lines. Poultrymen will never attain that success and get the price which they should get, until they stamp their eggs, grade them, and properly prepare their poultry for the market. You can only do that when you have fairly large quantities, and you can only get large quantities when you have a number of men to co-operate. I think we have just begun to realize what can be done along co-operative lines, and it is to co-operation that all classes of farmers must look for success.

We know what has been done in fruit lines by intelligent co-operation. I have an instance in mind of a farmer in Western Ontario who was thinking seriously of cutting down his orchard. It was not worth more than $50 or $75 a year to him, and he had concluded that he would prefer to have the land for other purposes. A neighbor farmer said, "I will rent the orchard from you for four or five years, what do you want for it?" The

reply was, "I will take $50 for the first year and $75 for each of the next three years, and if you do not make any money on it you need not pay me?" The man said, "I will pay you if I decide to rent the orchard." He rented the orchard, and the first year he cleared several hundred dollars, as a result of spraying and intelligent cultivation. The next year, after all the expenses were paid, he cleared $800. It seems like a fairy tale that he would clear $800 from an orchard for which he paid a rental of $75 a year, but he has the figures to show. This is one of our leading co-operative men, and it was by selling through the local co-operative association and by getting his spraying material at a cheap rate that he was able to carry on the work at the minimum cost. I trust that the poultrymen will form more local organizations.

We have issued a little booklet on the organization of Farmers' Institute Clubs and these are free to those who ask for them. It makes no difference whether you take up poultry subjects or fruit subjects, the club is the place where these things can be taken up to advantage. In these local clubs we have a force which is going to be far greater than we had thought when we first advocated their establishment. It was from noticing the splendid work of the Women's Institutes that we were induced to recommend similar organizations among the farmers. In the Women's Institute we have the women coming back from month to month to their meetings for the discussion of anything and everything that will make for the betterment of home conditions, and in the Farmers' Clubs we want to discuss anything and everything which will mean greater profit to the farmer. We must not, however, lose sight of the fact that profit is not the only object in view. The club organization can be utilized for literary, musical and social advancement.

Mr. McGrew: This utility question is a very peculiar one. Generally you will find the man who points out the utility bird, points out the poorest bird in the show.

Prof. Graham: Did you ever see the best bird in the New York Show with a crooked breast bone?

Mr. McGrew: Yes; crooked breast bones are made by roosts.

Prof. Graham: Did you ever have a bird that would breed fifty per cent. crooked breast bones?

A.—No; I never had a bird that bred ten per cent. with crooked breast bone.

The Chairman: I am quite sure this educational feature is an admirable one and will do a considerable amount of good. Professor Zavitz gave a lecture at Lindsay on seed grain, and he was able to demonstrate to the farmers that by giving up the growing of one particular oat and sowing another, it would make an increase of one hundred and ten thousand dollars in one year alone, and that is a big gain in one locality.

The next speaker on the program is Mr. Bennett, a young man who has shown some very good parts as a poultryman, and his experience with poultry, I am quite sure, will be interesting and profitable.

RAISING CHICKENS.

By Wilbur Bennett.

When I first started to take an interest in poultry, there were just a few Minorcas on our farm, so that I had to get some Barred Rock hens to do my hatching, as I did not have an incubator at first.

Well, that year I reared only about sixty chickens, practically all Minorcas, and as they were not hatched before the 15th of May or so, they did not make winter layers. That first year we built a poultry house, 24 by 15 which did not prove very satisfactory for its intended purpose. Built too close and warm, it was nearly impossible to ventilate it properly to avoid moisture, and I have since turned it into a brooder house.

The next year, 1905, we purchased a 220 egg Chatham machine and raised some 300 chicks, but as I was an amateur in the marketing I did not make anything extra with them, but got some 75 good pullet Barred Rocks, which were the start of my present flock.

In January of 1906, I attended the Poultry Short Course at O.A.C., and right here I would advise anyone in a position similar to mine to do likewise. Besides teaching one the practical theory of the business, it tends to make one take more interest and have more respect for it.

In the spring of 1906, fresh from the Poultry School, I hatched some 600 chicks with my "Chatham" helped out with some broody hens. I don't think I have ever had quite as good luck since, as I had that year. The eggs were fertile and the chickens lived, raised in home-made brooders. We built a house 60 ft. by 12 ft. to accommodate the pullets. The house was built on the fresh air idea, straw ceiling, cotton front, so with the old house I was able to carry over 220 pullets as winter layers. We dressed the cockerels which had been crate fattened and shipped them to Montreal. They little better than covered the cost of rearing themselves and the pullets. I kept pretty close account that year from the fall of 1906 to October, 1907, and can give fairly close figures. I sold all the flock but 100 in June, and taking the average of the entire flock it was about 130 eggs, most of which were laid before June. I sold the eggs to Walter Paul, of Montreal, and the fowl to a Hebrew butcher of the same place. The eggs netted 24 cents a dozen and the fowl about $1.50 per pair at 13¼ cents, alive, f.o.b. Figuring the entire proceeds to June and that they had all been sold, we have:

Fowl sold for	$ 75	Cost of feed	$1 00
90 Eggs at 28c. per dozen	2 10	Profit	$1 85
	$2 85		

I can always figure that the cockerels sold will easily defray the cost of bringing themselves and pullets to the time of killing and laying.

In the summer of 1907, we added to our plant a 250 egg Prairie State incubator and six "Universal Hovers," with 6 by 8 coops to accommodate them; also another house, 87 by 12 similar to the first one to hold 200 hens, and also feed room. I reared some 1,200 chicks, so that in the winter of 1907-8 we had some 350 hens. But as they were not all hatched quite as early we did not get quite as large a yield in the winter months as before, and the price of grain also becoming a factor did not make so high an average profit as in 1907—about $1.25 per head that year.

Last spring we added another 200 egg "Chatham," also a 360 "Model" and 12 more "Universal Hovers" to our plant, and reared about 1,200 more

chickens to maturity. They did not continue hatching as late as the summer before. Selling the produce to the same men the price of eggs and chickens was about the same, chickens 10 to 12 cents per pound, live weight, f.o.b.; also selling quite a number of eggs for hatching, especially of Buff Orpingtons, of which I had about 50, which helped to average things up.

My manner of feeding is along the lines which were followed by Prof. Gowell at Maine State. Dry mash before the fowl, and grain, such as corn or wheat, in litter. I never yet have fed beef scrap. We have a bone cutter run by a tread power, by which we also crack wheat or corn besides cutting wood, etc. We try to secure about 100 pounds of green bone a week, and feed to the fowl each day about ½ ounce apiece. They also have the other accessories, such as mangels, oyster shell, etc. The chickens are reared along the same lines, dry mash placed before them three or four times a day at first, with chick feed or cracked wheat in the cut straw to keep them going; also milk and water to drink with mangels, etc.

We have used the "Universal Hovers" exclusively to brood; they are placed in the brooder house at first, but later in colony coops where they are used till heat is no longer required.

I would like to know the opinion of those present as to my method of selling the cockerels. One is generally told to dress them to get over the shrinkage, but one cannot sell to Hebrews and kill them. It costs for expressage from Peterboro to Montreal about $1.50 per 100 pounds, that is with weight of coop, etc; but I sell f.o.b., so how would 12c figure out with the dressed fowl prices.

Mr. McGrew: The cockerels paid for themselves and the pullets as well?

A.—Yes.

Q.—What bone cutter have you got?

A.—A small sized "Humphrey." I pay ½ cent a pound for the bone.

Q.—How much land have you got on the farm?

A.—One hundred acres.

Q.—You made $450 out of 300 hens?

A.—Yes.

How much did you make out of the rest of the farm?

A.—About the same.

Q.—You never had any trouble with your chickens, and you raised 75 per cent.?

A.—Yes. I had better luck with the early ones than the later ones.

Mr. John Ridge-Terry: Don't you think you get tired towards the last, and you do not give them so much attention?

A.—That might be.

Q.—Do you get all of these chickens out before you put in your crop?

A.—Yes. I will get them all out this year before the fifteenth of April. I do all the farm work myself.

Q.—Do you look after these chickens alone?

A.—Yes; my father is a carpenter and he helps me in putting up the buildings.

Q.—How many hours a day do you spend at farm work?

A.—I do not spend over three hours a day with the chickens.

Q.—You do not spend any more time with the chickens than with the cows?

A.—I do not spend much time with the cows. I take no interest in them. The only things on the farm I take any interest in is the chickens and the garden.

Q.—How many eggs do they lay?

A.—I get from twenty to thirty in the winter time from fifty hens. I do not think they average over twenty eggs a day for the entire month. I have always had trouble with my Rocks, as they do not mature early enough. I only keep Buff Orpingtons and Rocks. I had fifty Orpingtons and three hundred Rocks, and I had more profit from the fifty than from the three hundred Rocks. I had an average of one hundred and thirty eggs from each bird.

Q.—Do you feed green cut bone?

A.—Yes. All the time except in warm weather; in the summer I feed ½ ounce a day. I feed it just as I get it fresh.

Q.—How do you spread it around?

A.—Just in a long trough.

Q.—Do the greedy ones get the most?

A.—Sometimes we get a hen that has a little trouble with it.

Q.—Do you put in five pounds for twenty hens?

A.—No; I would not. I think you would have liver trouble if you did. Sometimes when they get too much, their combs become black.

Q.—What is the highest price you have got for a dozen eggs?

A.—Fifty cents, from the first of December to about the first week in January. The price always drops with me in January, and I only get thirty-five cents for them.

Q.—You sell them wholesale

A.—Yes; to a grocer. I put them up in thirty dozen crates.

Q.—What will your young chickens average in weight?

A.—Four or five pounds apiece at five months old.

Q.—It cost you to raise a pullet to laying time, thirty-five cents?

A.—Yes.

Q.—Are you not able to get your Rocks ready for the market quicker than the Orpingtons?

A.—They fill out better.

Q.—How much land have you got where you raise the chickens?

A.—Four or five acres of an orchard.

Q.—Do you cultivate it?

A.—This year I planted a new orchard on two acres and I raised my chickens there in the corn field.

Q.—I understood you to say that you made as much profit on your chickens as you did from the rest of the farm?

A.—Yes; we did.

Q.—In addition to that your investment, as far as the poultry is concerned, is not more than one-tenth of the rest of the farm?

A.—I think not more than one hundred and fifty hens in the poultry plant.

Q.—You have at the present time seven hundred dollars in poultry and incubators?

A.—Yes; fencing and everything combined.

Q.—In addition to that you spend quite a bit of time helping with the farm work?

A.—Yes.

Q.—Your poultry business is far more profitable than anything else?

A.—Yes; I think I can take care of a thousand laying hens.

Q.—What kind of a homemade brooder have you?

A.—A "Universal Hover" brooder.

Q.—Do you buy the parts?
A.—They come complete ready to fit any brooder.
Q.—Do you use colony houses?
A.—Yes.
Q.—You spread this out over the orchard?
A.—Yes.
Q.—How far apart do you put the colony houses?
A.—100 feet.
Q.—What time in the year do you hatch your pullets?
A.—I like to have them all out between the fifteenth of March and the fifteenth of April. I sell cockerels the first week in June.
Q.—How old are they when you sell them?
A.—Twelve weeks.
Q.—How much do they weigh?
A.—I have had them weigh two pounds in twelve weeks.
Q.—What do you get for them?
A.—I get thirty cents a pound from the Canadian Produce Co.
Q.—Do you sell them alive?
A.—Yes.
Q.—Have you floors in your colony houses?
A.—Yes; except some three by six coops.
Q.—Did you ever try cement floor?
A.—No; I am not troubled with anything but hawks.
Q.—Do you send your eggs to Montreal every day or just twice a week?
A.—Once a week.
Q.—You have no summer eggs?
A.—I have quite a lot the first of July and after that nothing to amount to anything.
Q.—How many birds have you lost of these one hundred pullets in the last two months?
A.—Of the Orpingtons I have not lost any.
Q.—And the Rocks?
A.—In the Rocks I suppose I have lost eight or ten in the last two months.
Q.—What size building have you where you keep a hundred Rock pullets?
A.—Twelve to forty in two pens; each pen twelve by twenty.
Q.—Do you have dropping boards in your houses?
A.—No.
Q.—How often do you clean the hen house out?
A.—Every three weeks I drive up in front of the hen houses, take out and spread it right on the farm.
Q.—Do you haul your manure direct on the farm from the stable?
A.—No.
Q.—How many cockerels do you keep in each pen with fifty pullets?
A.—Four.
Q.—Do you find they fight?
A.—Sometimes; but not if they have been raised together.
Q.—Don't you think there is one or two too many?
A.—No; I do not think so.
Q.—What do you use for green food?
A.—Mangels and sugar beets this year.
Q.—Have you ever compared the sugar beet with the mangel?

A.—No, I have not, but I believe they like the mangels best.
Q.—Do you feed the milk skimmed or sweet?
A.—Skimmed milk, sweet. I feed it sour when I am fattening.
Q.—What ration do you use for fattening?
A.—About half oats and the other parts barley and buckwheat.
Q.—When you feed them three weeks what gain do you make?
A.—About a pound and a half or two pounds.
Q.—Are they troubled with lice?
A.—Yes; I spray with zenoleum.
Q.—Do you white-wash your hen houses?
A.—Yes; I do that in June once a year.
Q.—Are they troubled with influenza in the fall of the year?
A.—Yes; they were trouble with it a year ago.
Q.—What did you do?
A.—Gave them a dose of salts, and they seemed to get over it.
Q.—Do you think zenoleum will kill red lice?
A.—Yes; if you put enough on.
Q.—What quantity of salts do you give to one hundred hens?
A.—About a handful in water.
Q.—What do you mean by a handful?
A.—A couple of tablespoonsful.
Q.—Do you use table salt in your mash?
A.—No.

The CHAIRMAN: I am sure we are very much obliged to Mr. Bennett for the information he has given us. Personal experience of that kind gives us more hope for the poultry industry.

POULTRY RAISING.

By L. A. MARTIN.

I took a short course in poultry in 1905, and I have attended the College the last two winters, and I feel that I have been well repaid for my trouble. I think my experience in taking the poultry course has been a good investment to me and it was taking that short course that induced me to come here to the longer course.

I think the poultry business in this country lies more with the average farmer than with the men who are following the business as a special one. Greater profits are realized by farmers keeping from fifty to two hundred hens on an ordinary one hundred acre farm. There are many things which help to make poultry raising, as part of the farm work, more successful than as a special business. One of the speakers mentioned yesterday that certain parts of Connecticut were not profitable for the poultry business on account of the land being too expensive. On some of our most expensive land it has been proved that poultry can be managed in connection with general or special farming to good advantage, and double returns realized from the same area of land. Poultry can be carried on in connection with horticulture, dairying, etc.

The first and most important part of the poultry business, in my estimation, is the stock. The kind of stock for a farmer to keep, depends on his aim and the line of business he intends to follow. I find that the general purpose fowl gives the best satisfaction.

I intend to give some of my own experience, but I wish you to understand that I do not think my experience is the best; because I find that ideas change very rapidly, especially in connection with poultry business. I find the Barred Rocks very hard to beat as a general purpose breed. The strain, I think, is more important than the breed. I have been giving little or no attention to color, I have been selecting for the purpose of improving the vigor of the type and the egg laying qualities.

Ten years ago I started a little poultry flock of ten chickens that were handed over to me. I was quite young then, and I felt proud of this care that was given to me, I think that is the reason I have developed a special interest in poultry. We bought ten pure-bred Barred Rocks at that time, and since then we have been buying as good males as we could get in the locality at ordinary prices every year.

I have no trap nests, because it is a question in my mind whether it is profitable for the ordinary farmer to use them. They require considerable time, and I think anybody with an ordinary knowledge of poultry can have a fair idea of the most profitable hens.

Q.—What do you mean by ordinary knowledge?

A.—In the winter time if you go into the hen house and see one or two hens off in a corner with pale combs, and they don't care whether they come to get anything to eat or not, and these hens are generally of a fluffy nature, then you can say, "That hen is not good; I don't want her." That is the kind of hen that doesn't look like money. I do not mean to say you can tell them as well as you would by using trap nests.

Q.—Did you ever have a hen that was broad across the forehead that was a good layer

A.—I have not noticed that.

Q.—What do you call an ordinary price for a cockerel?

A.—One that I can get for $2. Where the business is not developed in a fancy way you might get one for $2 that you would have to pay three times that price for to Mr. Graham or some fancier. Most of the ordinary farmers do not know the value of a bird.

Next I come to the matter of housing. We had two old houses, 16 by 10, made out of ordinary single boards with battens over the cracks and with a mud floor. Part of the floor is raised up, on which I keep the feed-hopper and water, etc., and the rest of it is used as a scratch house.

Q.—What do these houses cost you?

A.—I do not think two would be worth $25.

Q.—How many birds did you keep in these houses?

A.—From twenty to twenty-five. In the summer time I can keep more, because they are out all day. I do not think it matters how many hens are in the houses as long as they have plenty of room to roost.

Q.—Do they run around the barnyard?

A.—In the summer time I have about 1/5 of an acre around these houses and I keep it cultivated, and at times when it is not suitable for the hens to run out, owing to the crops, they are confined in this yard. I cultivated it after each rain, and for shade I planted plum trees. They are small now and I have a couple of old doors and the hens stand under them. Around the outside of this yard I planted sunflowers and these grow to a great size, some, some ten feet high and make good shade around the outside of the yard, and it adds to the looks of the place.

With regard to ventilation, in the summer time I get all the fresh air I can without drafts and in the winter time I have one side of the house open. For scratching material I think good cut straw is about the best.

Q.—Do you like that better than uncut straw?

A.—Yes; it is hard for the hens to work around in the long straw. I have dropping boards on the roosts and eight feet above the ordinary scratching floor. I scrape the dropping boards every two days in the summer time. I find by doing that and using a little coal oil I did not have much trouble with lice.

Q.—Do you keep 150 birds in these two houses in the summer time?

A.— Yes. I think the eggs are the main part of the business. We try to make the best we can from the other parts as side lines. I practice the dry methods of feeding with good results. In the summer time I see that the hens get green feed. I have a piece of ground where I sow rape early in the spring. Before the rape come on I feed them cut green clover.

Q.—Do you find any flavor in the eggs after feeding rape?

A.—No; we sell our eggs in St. Catharines, and we have not had any complaints. I have a home-made hopper for feeding dry mash, I like to feed bran, cornmeal and middlings. The only grain I feed is whole wheat. We grow the corn on the farm.

Q.—Do you ever have roup on your place?

A.—I do not think I have. The hens had colds in their eyes and their faces have swollen up, but nothing serious or anything that I thought was contagious.

Q.—Any cancer in the mouth?

A.—No.

Q.—Do you find any difference in egg production when feeding cracked corn and whole corn?

A.—No. In the summer time I have skimmed milk before them all the time; it does not seem to make any difference whether it is sour or sweet.

Q.—Do you wash the dishes that you put the milk in?

A.—No, I do not. I just pour it in on top every morning, unless there is too much sour milk, then I might put it out. I keep the water dishes washed. I keep oyster shells before them all the time. I think if chickens have plenty of oyster shell grit before them, they will not eat the eggs. I have seen eggs laid on the roost and break, and the hens have actually eaten the egg and left the shell. I give them all the mangels they will eat up.

Q.—Do you hang them in the pen or cut them open?

A.—I cut them in two with a shovel, and then I put them on a nail in the wall.

Q.—Would twenty-five birds eat two big mangels?

A.—No. To take the place of the milk I feed them meat in the winter; milk does not give such good results in winter as it does in the summer. In our neighborhood there was a horse that became unprofitable to feed, and I bought the horse for $3. I dressed it as you would ordinary beef and I sold the hide for $3. I had the carcass left, so I hung it in a place where it froze. We have an ordinary old-fashioned brick fire-place in an old shop, and two iron kettles or pots, that hold between two and three bushel each. I cut the carcass up so that it would fit into these kettles and I started to boil it early in the morning and kept boiling until it was nicely done.

Q.—Do you think it is necessary to boil it very long?

A.—It was necessary to boil it until it was done, as the horse was twenty-five years old.

Q.—What about disease in the horse if it was not cooked?

A.—You would run a risk of toxines.

Q.—How many horses did you take to feed 150 hens all winter?

A.—I fed that horse six weeks. Then I got a horse that had the heaves, and I got forty pounds of fat out of the horse. It lasted six weeks. Then I got an old Jersey cow, and fed it to the chickens. I sold the hide from the cow for $6, and had the carcass left. Then a neighbor told me he had a cow about a year old that had just choked to death and I took it. I got that meat practically for nothing. I was very careful to give it to them gradually until they became accustomed to it; after that I gave it to them every day, and then I gave them all they wanted of it.

Q.—How did they lay?

A.—They laid splendidly, and they did not eat much wheat. My father said I was feeding them too much grain, and that I should keep an account of what they were eating, and about the first of July, after the laying period was over, I had $150 above expenses from these 150 hens as my net profit. I showed him these figures, and since that time I have no trouble in using my own judgment in regard to what I want to do in the line of poultry. He is quite convinced that there is money in it if it is managed properly.

Q.—Have you had any difficulty in feeding middlings?

A.—I have never fed very much. I feed middlings, bran and corn meal in a mash. We cannot get good middlings, they look like ground bran. We have a stone grist mill near our place where the farmers get their wheat ground for their bread, because they like it better and we get the middlings and bran back from this stone mill.

Q.—Do you know whether you have much cockle growing in that section?

A.—No, we have no cockle. The wheat we buy comes from Manitoba; high grade flour is made from this wheat and it is good wheat. I have had no experience with weed seeds whatever or anything of that kind.

Hatching Chickens. At first I hatched with hens, and then I bought an incubator and two brooders of the "Cyphers" type, and I have used the incubator ever since. My experience in hatching with an incubator has been about the same for years. I have used it for six years. Last year I thought I could get better results by using zenoleum, but I do not see very much difference. I put in 220 eggs, and I never get more than 130 chickens and never less than eighty. I generally have a good vitality.

Supposing you put 220 eggs under hens, how many chickens would you get?

A.—I have had very good results from hens, but when it comes to hatching 200 or 300 chickens, I think I can get just as many chickens from the incubator as I can from the hens. I prefer the incubator every time. When the hens can run all over the place and select their own nests you have good results, but when you have to move the hens, my experience has not been as satisfactory as I would like to have it.

Q.—Have you had any White Diarrhoea?

A.—I am not sure. One summer I had quite a lot, and the chickens came about the first of July. They were very smart and thrifty, and looked fine for a few days, but later on I lost nearly the whole lot. At the time I knew nothing about White Diarrhoea, and I thought it was due to wrong feeding. It was practically impossible to keep the brooders warm before the first of May last year, and in place of using brooders I set a few hens at the same time as the incubators. I put the chickens with the brooder and hen and I was very much pleased with the result. I only had one hen that gave me trouble, she killed every chick. I think the best way is to put one or two under a hen in the evening, I leave them in the nest for a while,

and then I put them up in the ordinary coops. I put the chicks out in the corn field about the first of June. I hopper feed them and give them milk, but no water and no dry mash. They grow fine and run all over a twenty-five acre corn field; and in cultivating the corn the chicken will follow you all over the field.

Q.—How much money have you invested in your outfit?

A.—Not much. The houses are not worth very much; 150 hens are worth fifty cents a piece, and the two incubators and brooders worth about $50.

Q.—How much are you making a year?

A.—I made $140 out of the hens one winter.

Q.—Will the balance of them pay the expenses?

A.—Yes. I calculate that the cockerels pay for raising the pullets. I crate-fatten the late ones, but I did not early ones. I caponized twenty birds that were late. They lived on very little, and grew nicely, and I crate-fed them for the Easter market. I put them in the crates for three weeks. I dry packed them, and their backs looked just like a roll of butter. I sold them to Mr. Wilkins and he sent them to Buffalo. I received twenty-five cents a pound for them with the feathers off.

Q.—How much did they weigh?

A.—One weighed ten and a half pounds; that was a Barred Plymouth Rock. They were hatched in July. Experienced men caponizing, loose 5 per cent. I lost more than that. I see no reason why caponizing cannot be carried on, as I think there is a chance of making good money.

Miss YATES: My experience has been very satisfactory, I do not think I lost 3 per cent.

Mr. FORTIER: Last year I caponized forty-five, and I do not think I lost one. There is no mother on earth better than the capon. I put twenty-two chickens to one capon, and they are the best mothers you can get. They do no permit any chickens or roosters to go near them.

Dr. MORSE: Using capons as mothers was mentioned by Pliny. The chicken must be introduced to the capon at night, and thereafter you can gradually increase the number, and they are able to take care of a larger number than a hen, and they will fight for the young ones.

Mr. MARTIN: I shipped a few chickens to Montreal in bushel apple boxes. I put ten in a box and sent five boxes to Westgate & Gouse, and I received a little more than I would have received in St. Catharines. I think by working that trade up we will be able to improve prices in our own locality.

HOW TO SUCCEED WITH POULTRY.

By T. F. McGREW, SCRANTON, PA.

The well trained man in every line of work is usually the one to whom the greatest amount of success comes in all business ventures. Look about you in any and all directions, study the outcome of every venture, and learn from experience or observation the greatest lessons of the present time; they teach us that success comes as the reward of diligence put forth in an intelligent manner. I have seen a thirty-acre field yield more than three thousand bushels of corn from a single crop; no fertilizer was used, and but little cultivation, as we now understand the term, was given it. During the same year and in the same locality, corn was burned for fuel and potatoes sold at fifteen cents per bushel. At that time, even shiftless methods brought

at least partial success, but now such methods assure failure from the very start.

This is not only the day of progression, but it is the day of compulsion as well. One is compelled either to progress or fall behind in each and every walk of life. We have all been told that there is "plenty of room at the top." That was true in the sixteenth century, and it is true to-day in every line of endeavor, and doubly true of poultry culture. In every branch of trade throughout the world the keenest competition exists. You who dwell in this colony of the King must meet at the port of entry on the other side the competition of far off Russia for the egg and poultry trade of your own Motherland. Well may we ponder over the words of the poet, who wrote:

"New times demand new measures and new men;
The world advances, and in time outgrows
The laws that in our fathers' times were best."

Without knowledge and experience we fail. No one can fathom the jungle or sea without the line and compass, nor can any of us master the business of growing poultry at a profit, unless we have the knowledge of what to do and the experience as to how it should be done. Yet there are those who fail to make a success of rearing poultry from no cause other than their own ignorance, carelessness, or indifference to the needs of the fowls.

The statement may be a startling one, yet I am convinced that fully one-third of all the chicks hatched do not receive food enough to grow them to a healthy maturity. Tons of chick food is wasted by the anxious ones during the first few days or weeks of the chicks' existence. It seems to be the general opinion that the young chicks must be disturbed every hour or oftener, to be fed. Unfortunately, this opinion is not continued; in thousands of instances, the partly grown chicks are almost starved to death.

Recent examples of this have come under my observation, one being a case where over three thousand chicks were so poorly fed that they averaged scarcely two pounds each at over four months of age. Investigation proved that the chicks were fed about four bushels of grain per day when they were over four months old; this is about four thousand ounces of grain per day, or one and one-third ounces per day for each chick; during the same week in which we saw the half-starved flock, we saw over four thousand chicks in another locality that were fed more than four times as much per day as the other lot. The profitable prices received for the well-fed stock proved the advantage of good feeding. In order to succeed with poultry, the chicks must be "well hatched," "well fed," "well grown," and "well sold," and to accomplish all this, the parent stock must be perfectly "well," and those who grow the chicks must be "well informed" as to poultry culture.

If I had been asked one year ago to tell this gathering how to rear a thousand or more chicks upon a farm, I would have told it to rear them by artificial means; but if I were myself contemplating such a proposition at this time, I would attempt to hatch and rear the greater part of the chicks with mother hens. The appalling conditions that confront us on every side in the lack of vitality in the producing stock, eggs, and chicks, prompts one to ask loud and strong for the cause of this quick decline of reproducing power.

Not having positive assurance as to the cause of this trouble, I can only say that it does not exist when the chicks are hatched by hens from eggs laid by hens that have continual freedom. Where the colony system has

been properly applied for any length of time and the chicks are reared in the natural way, there is a most noticeable absence of anaemic chicks, and lack of vitality is almost an unknown quantity. During the past year I have seen thousands of eggs from yarded hens fail to produce a living chick; in one instance, over seven thousand eggs produced less than one thousand chicks, and not more than one-half of these were living at four weeks of age. Eggs from the same hens did little better when placed under hens for hatching, showing conclusively that there was not sufficient strength and vitality in the breeding stock to produce strong, healthy chicks; on the other hand, more than fifty per cent. is the record of the colony system farm.

"Well hatched" has a much stronger meaning than is generally accorded to this statement. You have undoubtedly been thoroughly well trained in the scientific terms as to what is lacking in the chicks that is not "well hatched;" but for the quick recognition of those of us who have not been so highly favored, let me say that well hatched chicks have *size, weight, strength, vigor,* and *vitality,* strongly visible in their general make-up, while on the other hand, all of these are wanting in the chicks that are not *"well hatched."* A chick cannot be well hatched from eggs that do not possess the elements equal to the production of the above named qualities, nor is it possible for fowls that lack vitality themselves to produce eggs that will bring into existence strong, healthy chicks. This being admitted as true, the first necessity for success is parent stock possessing marked vitality. When the real test of endurance comes to us in the way of unusual occurrences, such as heat, cold or disease, the greatest calamity occurs in the over crowded districts; tainted surroundings have a destroying influence on vitality; over crowding creates the cause of the loss of vitality. Tainted soil, the lack of natural exercise out in the open, over-crowding, and unnatural housing, is largely responsible for the lack of vitality in the producing stock. It is quite difficult to overcome this because the seed of destruction has been sown through many generations, and we must of necessity rebuild a foundation that has been undermined.

To continue without consideration the hatching and rearing of poultry by artificial means, is certain to destroy vitality, because it is so extremely artificial that the product is a hot house plant that is not intended for propagation, but for sale. We willingly admit the value of hatching and brooding machines of the present day; without them we could not grow poultry for market sufficient to half satisfy the people, but the producers are badly at fault when they destroy the vitality of the breeding stock by rearing them away from the mother hen.

The best poultry should be grown upon the farm; the farm is the natural home of the hen; there she can roam at will and live in a way that improves rather than depletes vitality. More poultry should be grown upon farms in the future than has been in the past, but more thought must be given to its production, or failure is assured. The cost of production advances each year, and the value of the best has advanced to meet this additional cost, but on the other hand, poor quality has never sold lower than it sells for at the present time. If you wish to succeed with poultry on the farm, remember that the way to accomplish this is to meet the requirements that demand that chicks must be—"well hatched, well fed, well grown, and well sold," and the parent stock must be strong in vitality and not lacking in any of the several requirements that are demanded by nature for the production of healthy offspring.

Mr. Geo. A. Robertson: (*a*) Has fertility any relation to the laying power of hens? (*b*) Will a hen that has been laying all winter, lay eggs

that are as hatchable as one that has not? (*c*) What variation would you expect from pullets hatched from a good producing female of strong vitality, as to size of eggs, color, and shape of eggs, and fertility of eggs from these pullets, which would all be full sisters?

Mr. T. F. McGrew: (*a*) Fertility of the eggs has nothing whatever to do with the laying power of a hen. A thrifty, vigorous hen that produces eggs of an even quality is usually the hen that produces the eggs from which the best chicks are hatched. (*b*) A hen that is a continuous layer all winter will not produce eggs from which as large a percentage of chicks will be hatched, as will come from eggs laid by a hen in the spring, which has not reduced her vigor through excessive laying during the winter months. Chicks from hens that have not laid in the winter will be the stronger, providing the hens are of equal quality. (*c*) The influence of the hen over color and shape of eggs must come through the line of several years of careful breeding; color and shape of eggs cannot be established in less than three or four generations. The fertility of the eggs does not have the influence that you refer to; the strength and constitutional vigor of the hen makes possible the greater fertility. Lack of vitality reduces fertility; full brothers and sisters are weak in fertility.

Mr. Robertson: (*a*) In line breeding for eggs, would you expect to get as good layers from an old hen mated to a cockerel seven-eighths or fifteen-sixteenths of her own blood, as you would obtain from pullets seven-eighths or fifteen-sixteenths of her own blood grown from the best laying pullets of the original hen each year, and mated to a male bird not so closely related, but of the same blood line. (*b*) As a rule in any one breed, do the best layers usually mature early? (*c*) Are the best layers usually as large in size as poorer layers?

Mr. McGrew: (*a*) If you line breed for eggs so close as to mate seven-eighths or fifteen-sixteenths own blood, you will fail. The seven-eighths or fifteen-sixteenth pullets mated to a male distant in blood line, but of equal quality, will give you the best results. Line breeding so close as you mention can only be followed with the greatest care in the selection of the most vigorous females. Shape and color is gained in this way in all kinds of animals. Milk flow and egg production are greatly lessened if this method is followed. (*b*) The most continuous and heaviest egg producers for several years are not those maturing the earliest. Gradual but regular development brings the strongest and most active production. The best layers are not always the heaviest hens; size and weight are different. (*c*) A bird may be a good size and not weigh so much as a smaller specimen. The best proportion and average sized hens are usually the best egg producers.

Mr. Robertson: (*a*) Are pullets produced from a chance poor layer of a good laying strain likely to produce more good layers than a good laying individual of a poor laying strain? (*b*) If chickens are slow in maturing and quickly maturing males are used on old hens of slower maturity, what variation would you expect in the stock?

Mr. McGrew: (*a*) The chances for success from either of these are so slight that it would be folly to waste time with either specimens as probable producers of good laying pullets. Good blood lines should always be preferred to a chance shot. (*b*) The male will have so little influence over the quick maturing of the chicks as to almost leave him out of the question when considered in this way. New blood introduced in the male line quickens the growth; this same influence would come from new blood in the female line. It is the introduction of new blood that quickens the growth.

Mr. Robertson: (*a*) Do not some individuals of the utility breeds which are inclined to put on inside fat, make continuous winter layers? If so, is it advisable to breed from birds of this type? (*b*) Do the best continuous winter layers as pullets always make the best laying yearling hens and two year old hens? (*c*) How should the best hens be picked for breeders?

Mr. McGrew: (*a*) Neither milk nor egg production comes so freely from fat gathering animals as from those that rob neither the pail nor the basket. Obesity is considered as a disease. Those that gather internal fat are not so prolific because the fat interferes largely with the working of the egg producing organs. Hens may gather fat and throw it off during the winter in heat and egg production, and they are not the best kind for foundation stock. (*b*) Usually the most prolific layers as pullets continue in the same line as yearlings and two year old hens, but there are exceptions to this which are governed by constitutional vigor. (*c*) As to how to pick the best hens for breeders, adopt the old Kentucky rule of "Like produces like," or "Follow the winners." For exhibition purposes, the most complete exhibition females properly mated give the best results. For egg production the best all-round egg producers are the kind to select for your foundation stock. Your males for egg production should be cockerels produced one year from your best hen, the following year from another of equal quality, and the third year in the same way; this continued in will establish vigor and egg production.

Prof. Graham: I understand that a disqualified hen raised some very fine show specimens for you.

A.—Yes, to show you how ridiculous many of the qualifications are. That bare toe came by accident; that hen never grew a feather on her middle toe.

Q.—Do you know why she never grew a feather on her middle toe?

A.—I do not; the colored man I had made a pet of her and we put her in a yard by her self, and let her hatch her own chicks, and the exhibition fowl came from that hen. Up to that time I had been taught to slaughter the disqualified bird.

Q.—Do you think it is right to artificially color the feathers for show birds?

A.—Breed your show birds; do not color them in such a way that you are ashamed to look yourself in the face.

Q.—What is your criticism of the Rhode Island methods?

A.—I do not think it can be carried on by any other people unless they were trained from childhood, and I believe the colony system is the system of the future and the system we have got to adopt.

Q.—These people are simply farmers, and they use the farms to raise chickens?

A.—Yes, and raise enough feed on the farm to feed their horses and cows.

Q.—Do they breed from hens or pullets?

A.—They kept all their hens till the fall of the second year, I did not ask whether they used pullet's eggs for hatching or not.

Q.—Did you ask him why he did not use the incubators?

A.—Yes, and he said he thought he got along better with the hens. I asked him if he ever used incubators and he said, yes, and if a hen got sick or died he put the eggs into an incubator and hatched them out and gave the young to the hens.

Q.—What does that man pay his poultrymen to help on the farm?

A.—I think he told me he paid each one of his men $45 a month, and gave him a house to live in, and what they call farm privileges. They are

thrifty people down there, and a house means an acre or two of ground, and farm privileges means so many eggs and poultry to eat.

Q.—What do you consider the average egg yield for Leghorns?

A.—They had 3,700 hens last year, and averaged 128 eggs apiece for the year.

Q.—If an earth floor is twelve inches above the ground, could that floor be anything but dry?

A.—Yes; I have seen some of them that are damp. It is hard to keep a number of fowl on a dirt floor and keep it sanitary. There is no way of cleaning it. If it could be managed I would always have a dirt floor, but it is not a safe floor to recommend to the average poultry keeper. The safest floor is a board floor, but the ideal floor is a board floor laid on top of cement.

Q.—What about mating?

A.—Always use cockerels hatched in March or earlier for the hens.

Q.—You get a male that is a good sire, and you breed him as a cockerel and he is a good producer what are you going to make of him next year?

A.—Are you talking about exhibition stock; if so and you have a good one, never let go of him.

Q.—Woud you breed him to his daughters or to the hens he is mated with previously?

A.—I would rather mate him to the same hens. I would make any kind of mating except a full brother and sister. When I was breeding exhibition poultry my plan was to mate cockerels of this year to hens of last year, and this was continued for twelve years with a stock of Buff Cochins, and for nine years there never was anything came in in the shape of new blood but one hen.

Q.—I understand one gets these rare birds from a certain individual? In order to make that strain prepotent, is not it almost necessary to breed them very closely together?

A.—Every good animal, whether a horse, cow, sheep or a hen, comes from a good mother, and if you will be careful to select the producing line from the female, you need not pay so much attention to the males. It is better to have a male from a producing line. Don't inbreed too closely for any other purpose, than to fix the color. I believe if you inbreed your poultry for egg production you will lose. I believe if you follow with good males females that are good in the line you will succeed, but you cannot succeed in increasing your egg yield if you inbreed from that same lot of hens.

Q.—Were not the Shorthorn cattle inbred close in the beginning to fix the type?

A.—Yes.

Q.—Were not the Leicester sheep bred in the same way? Why not inbreed your chicken to fix production as well as color?

A.—In producing of Merino sheep, and in the upbuilding of fine horses and sheep in Scotland and England, the most promising young stock is sent, each year, from the Highlands down into the Lowlands of Scotland or England and *vice versa*. The breeding stock is interchanged in that way from the hills and the valleys to receive the environment that they will receive from the new soil and surroundings, and that is why they have kept up, for so many years the vitality of the Merino Sheep. If I wished to inbreed a certain strain, it would be to my advantage to have some one living 100 miles from here breed some of these birds for me. I toe-marked pullets and cockerels and sent them to Michigan and Pennsylvania and Indiana and left them there almost a year and then brought them back into my breeding yard.

Q.—You think it advisable?

A.—I would do it. If I had a strain I wanted to inbreed, I would never try to grow it right on the same ground. I would send it away and get an environment of different soil. I always select a limestone district for my Cochins.

Q.—Why?

A.—Because more bone and more feather will come from a limestone district than will come from clay or sand district.

Q.—As you increase the length of feather or fluffiness of feather, do you decrease egg production?

A.—It has been done in both Brahmas and Cochins.

Q.—Have you any observations to lead one to the conclusion that that is a fact?

A.—Notice the Wyandottes of the present time. Many years ago when the noted egg producing strains of light and dark Brahmas were prominent, I secured thirty eggs from each; a neighbor secured fifty eggs from a noted laying strain of dark Leghorns. He set the Leghorn eggs and I set the Brahma, and an equal number of Cochin eggs under the hens. When matured, twenty-seven pullets were selected—nine of each variety. The Buff Cochin pullets were the first to lay, and they outlayed both the Light and the Dark Brahma pullets. The Brahma and Cochin pullets produced more eggs than did the thirty brown Leghorn pullets. If the Brahma and Cochin hens had continued at the same ratio for a year, they would have laid about 160 eggs each. The test was continued from October to the end of April. My Buff Cochins were the best laying hens within a radius of many miles. Doctors used to frequent our home during the winter months to secure eggs for patients. This continued until we were forced into the fluffiness and feather in Buff Cochins.

Q.—By whom?

A.—By the Standard of Perfection. The change in this was brought about by a movement made by fanciers to increase the heavy feathering of all Cochins. Since that has been in vogue, all the Cochins and the Brahmas have become very poor producers.

Q.—You think if we did the same thing with Wyandottes, we would make the same mistake?

A.—Yes, I think so. It takes more blood to support and sustain the average comb and wattle of a Minorca than it does to make the eggs she lays.

Q.—Look at the exhibition Game, which is probably the tightest feathered bird there is?

A.—It is extremely tight feathered, but that does not increase the egg production. The game birds never were heavy layers. They are nearer to the wild state, and they were never trained to it. They are like the English Dorking, and the minute you get a good egg production strain, whether Brahmas, Cochins, Wyandottes or whatever they are, they drift into the Mediterranean type of body. If you breed Wyandottes long enough for egg producing strain, they will drift into what we call the European type of fowl.

Q.—What is that type?

A.—It is exemplified in the Hamburg, Leghorn, and Polish. Take the large poultry farms. They are breeding Leghorns that are inclined to be long in body and lean in the fluff; they do not have the curves we see on the exhibition birds.

Q.—The hen to lay a lot of eggs has got to eat a lot and must have a big crop?

A.—Yes.

Q.—Take the Indian Game, where you require the close feather, especially in the fluff, and you want square shoulders. Is that the reason why the Indian Game does not lay? Is it because the conformation is wrong?

A.—The Indian Game belongs to the Malay family, which is close to the wild type. They never were meant to lay any more eggs than enough to reproduce, and if you take them and work them for egg production as a man did over near Hartford, you could not tell they were Indian Game type at all.

Q.—As we revert towards the original type, we cannot have eggs?

A.—It is the same principle with the hen as with the cow. In the first place the cow has got to have a place to handle the food. If a cow is narrow between the legs, she cannot possibly have a place to put the milk, and if a hen is narrow between the legs, the strong bones press in and confine the egg forming organs, and that hen is not a good egg producer. You may have an exception; and if you will follow up that type you will squeeze the egg producing faculty out of them.

Q.—Is it fair to compare egg production to milk production or meat production or color production; does not it represent an entirely different part of the organism?

A.—I think the production of eggs and milk is identically the same. I do not think the color has anything to do with production.

Q.—You look upon the production of egs and milk as analogous?

A.—I do. They have both to be fed from the blood, and the same products produce both.

Q.—Would not the production of eggs and the production of calves be analogous?

A.—No, I do not think so; that which produces eggs and milk would not produce the calf. I think the production of eggs and milk are right in line. A cow takes a little more roughage than a hen, and a cow can handle more roughage than any other animal.

Q.—Will you tell us why you do not ask for the keel bone in the utility breeds to be covered with flesh?

A.—I have asked for so many things that often members of the Revision Committee wish I would go home, and I think if I started in with that keel bone they would get a gun. I know it should be so. If I am judging fowls with a score card in my hand and there is a prominent point in the bone, it gets a point out for shape.

Q.—Take a Plymouth Rock and tell me if it has got any meat on it?

A.—The breast is broad.

Q.—Has fertility any relation to laying power in a hen?

A.—Fertility is a life germ in that germ cell. If you mean hatchable eggs that is a different thing.

Q.—Do hatchability and laying power both go together?

A.—Experience has taught us that a hen that lays but thirty or forty eggs, and lays these eggs during the breeding season, will hatch thirty or forty chicks from these thirty or forty eggs. Experience has again taught us that a hen that lays 150 eggs manages to get the same thirty or forty out of her 150. I do not think that you have increased the possibility of reproduction one single bit. There are some things in nature that we can control, but I do not think it is within the possibility of man to produce a hen that will lay 200 eggs from which will be hatched 200 chicks.

Q.—Is there any advantage or disadvantage in the dropping boards being close up to the roost?

A.—It is filthy, and it is an injury, because it brings the fumes closer to the fowls. The advantage of a dropping-board is that it keeps the floor of the hen house clean much longer than it would be without it. If the house is frequently cleaned, the dropping-board can then be within six or eight inches of the roost. Red mites, the curse of the poultry house, frequent dropping-boards. These mites live in the cracks, crevices, and irregularities of the roost, and come forth at night to feast on the bodies of the fowls. Whether they suck the life blood of the fowls or not, they are a great nusiance, and an annoyance about the hen house. I do not think that red mites gain their whole living from fowls; I think that they feast from one another as well. The most efficient destroyer of red mites is turpentine. A small quantity of this will instantly destroy a world of them.

Q.—What variation would you expect from pullets hatched from a good producing female of a strong fertility as to size of eggs?

A.—The size of an egg is governed largely by the food and the exercise. Twenty-five hens shut up in a small lot will produce small eggs. Turn the same hens lose on a farm and in two weeks they will lay eggs that weigh almost a third more. Mate hens that lay a good brown egg to a male of the white shell variety and you will get a mixed color of shell, and take a pullet from one strain of Wyandotte and cross her with a male from enother you may change both the shape and the color of the egg from her progeny.

Mr. Robertson: I think fertility is hereditary much more than egg producing powers are.

Mr. McGrew: When you say you believe eggs hatched from this hen in August will also hatch from her pullets, I do not think it will have anything to do with it. The Leghorn naturally lays a white egg. Fifty years ago in order to improve the Leghorn, the Derby Game was used. This got a little tint into the egg-shell. When I was at Mr. Rice's I asked him to let me see the product of his Brown Leghorns, and there were twelve eggs that showed a little bit tinted.

Q.—Where does the tint of the Black Minorca egg come in?

A.—Some claim they have crossed in different fowl to improve the size of the Minorca. They never got these enormous sized Minorcas by accident.

Q.—If your chicks are slow in maturity, and you use quick maturing males with late maturing hens, what variation would you expect in the stock?

A.—Outside of color points and life giving influence, I think the male has so little do with it, it is hardly worthy of consideration. I think all these influences come from the mother hen.

Q.—What if you got a male from an outside flock that spoilt your laying flock in a year?

A.—I do not believe you could get a male that would spoil laying stock, unless you happened to get a male from a poor family. I would not give $10 for a specimen to breed from unless I could see both the sire and the dam. The only time I ever trusted my money for a stock breeding bird without seeing him was when I sent to England. Mr. Proctor is the only man that ever got my money until I saw the breeding pen from which I purchased the stock, and if I was going into any kind of breeding proposition, I would care a great deal more for the birds that produced than the specimen themselves. Inbreeding is the worst thing in the world for egg production. Some one has decided it is absolutely necessary for a hen to lay 700 eggs during her life, and he says if she lays 200 the first year she

has only got the balance of them to lay as she lives out her natural life. I don't believe that at all. But I do believe that when you get an audience that will sit still as long as you have, you have a good one. (Applause and laughter.)

POULTRY RAISING.

By L. H. Baldwin, Toronto.

My subject must be a rather informal talk on the question of poultry raising. When we realize the number of poultry that are kept in this Province and the other Provinces of the Dominion, and realize what the product from that poultry must be, it is a very large amount, and if we appreciate what it means to grow two chickens where we only grew one before, or even to get one or two more eggs from our laying hens, it means in the total sum a very large increase in the producing power of the country. We often hear that poultry farms do not pay, and that poultry does not pay even in a small way on the farm. A great many keep poultry for private use; but they say they do not think they pay. From the experience I have had in poultry raising, I am perfectly convinced that the question of profit or loss with poultry is practically identical with the question of profit or loss on the farm or in the garden. If a farmer can cultivate his fields so as to secure a full crop, he will make farming profitable. If on the other hand, he is an indifferent farmer, does not put the proper work into his fields, and does not keep them in good shape, and if he is not careful in the selection of his seed grain and to see that the seed is planted at the right time, it grows in a weakly state, and the weeds smother out part of the crop. The result is that when the crop is harvested and threshed, he has only a half a crop. If he had put a little more time to get the soil in proper shape, he might have raised a full crop. The ploughing and seeding and harvesting and threshing has to be done just the same for a poor crop as for a good one, and the poor crop barely pays for the cost of cultivation, and leaves nothing for profit.

I believe the same is true with regard to poultry. If we only get half a crop in poultry, poultry farming does not pay. If we can only get a full crop of poultry, poultry is a very profitable adjunct to the farm, and I believe can be made a profitable enterprise even as a specialty.

The question is how are we going to secure a full crop of poultry? Let me illustrate it in this way: if we have a poultry farm which requires the production of 1,000 birds to meet expenses, then you require another thousand birds upon which to realize your profit. If you start out at the end of your hatching season with two thousand birds, every bird that dies is so much off your profit. If you lose five hundred birds, half your profit is gone. If you lose one thousand birds, you have lost 50 per cent. of your stock, which means all your profit, and the loss after that means you are so much behind. Now, you can see how important it is that we should have a full crop, and the question is how are we going to secure a full crop? Every speaker has pointed out how to give us good hatchable eggs, so as to get good strong chicks. It is also important that these eggs should be hatched at the proper time. I think a great many of us are apt to delay the period of hatching. I suppose under natural conditions the bird makes her nest and hatches her young every year at about the same time, so that naturally a pullet would commence laying at just about the period at which she herself had been hatched. We know, however, that it is easy to develop our pullets and have them laying in January. There is no doubt that winter

layers are the best branch for profit in poultry. You can sell eggs in the winter time at 50 or 60 cents a dozen, while the summer price is only 15 to 20 cents. That is a great difference; one egg in the winter equals two or three eggs in the summer.

Two things are very prominently before us in securing birds to make good winter layers. First of all we must have a number of birds from which to select our layers, and we have to cull very strenuously, and that is a pretty hard thing to do. We have hen houses to accommodate a certain number of birds, and we like to see those houses filled. In order to have profitable winter layers in sufficient number, it is most important that the poor layers should be culled out. Then the mortality amongst our chicks has been altogether too heavy. If we could secure in chicks 50 per cent. of the total eggs set it would not be so bad, that is taking two eggs to produce a chick. I think we ought to secure more when we have proper conditions. Having hatched 50 per cent. of the total eggs set, we are able, I think, to stand a loss of probably 30 per cent., certainly 20 per cent., and yet have a fair proportion of our flock left to make profitable returns; but when the loss amounts to 40 or 50 per cent., and sometimes 60 or 75 per cent. of the birds you have hatched, it is discouraging, and makes a losing business. When we want to produce a large number of birds, especially early in the year, the question arises how are we to hatch them? Undoubtedly the more reliable source is the hen. I think, however, when you consider for a moment the conditions to which our breeds have been brought by careful selection, that our hens are to a large extent artificial, that hatching the eggs under them is almost as artificial as hatching eggs in an incubator—when we get thirty or forty broody hens sitting at once, it does not take long to realize that they are altogether too artificial.

In order to get a number of chicks hatched early, we must rely on incubators, and that leads us to the difficulty we have had with incubators; we have had such serious losses. The question was raised some years ago whether there were not some defects in our method of incubation. It was perfectly manifest that there was some scourge that was carrying off our chicks when they were from three to ten days old, carrying them off in such numbers that there was manifestly something radically wrong. I think this mortality with incubator hatched chicks gave rise to the many chick feeds that have been advertised by poultry supply men. They contended that the loss of the chicks was due to defects in feeding, and if we would only buy such and such a chick feed, we would have satisfactory results; and they would send you letters from poultry men who had fed their chick feed and had had no losses. I have always contended that if we cannot raise chicks with the ordinary mixtures of feed we have on the farm: wheat, corn and oats, there is something wrong about the poultry business, and something wrong about the chicks we feed.

We have heard the excellent address given by Dr. Morse, and we appreciate greatly the work he has done as a scientist, and we have enjoyed his first lecture. There can be no doubt whatever of the presence of these germs, and I am quite willing to agree with Dr. Morse in the mortality of the chicks being probably attributable to this germ; but why is it to be attributed to the ravages of this germ? That is the question.

In my experience, and I have repeated it often, I made probably as great a success at operating incubators as any one in this country. And I can say that without appearing to be boasting, because I can now see that there was nothing to crow about; as Professor Graham often says, "I was a fool for luck." I started out with many men saying to me, "You cannot

make poultry a success when you rely on artificial incubation. The vigor of your flock will die out and you will not succeed." I made up my mind I would not hatch a single egg under a hen, and rely on nothing but an incubator. I secured some birds—White Leghorns—and later on some White Wyandottes. Every year, I incubated entirely by artificial means. At first I had some trouble with roup, but I adhered rigidly to the advice I got from our good friend Mr. A. F. Hunter, to use the axe and not to attempt to treat them. If ever I had a weak bird it was knocked on the head. From year to year the vigor of my stock improved; their egg laying capacity in the winter especially increased. The hatchability of the eggs they produced improved considerably until in the final year of my success I set about 1,200 eggs and I hatched 66 per cent. of the total eggs set—for every 100 eggs I put into the machine that season I got 66 chicks. I have not accurate records of the mortality, but I believe it was not over 10 per cent. of the total number of chicks hatched, and as soon as my chicks reached the age of ten days I had no more worry about them whatever. The only loss I had afterwards was from accidents, dogs, cats, and crows, and I did not lose a great many even by these means. They were a thrifty, active vigorous lot of birds, and turned out most excellent winter layers. Their table qualities were of the best, and my birds were sought for and appreciated. I did not do any crate feeding. I used to catch them right from the fields and kill them, pluck them, and send them to market.

I then changed my conditions, moved my poultry plant to another part of the estate, and built there a special incubator room. The first year I continued to hatch under the old conditions, and I brooded on the farm on absolutely new ground, and the chicks did as well as they had done before. For eight years I had raised my chicks on the same ground and they kept getting better and better. The first year on the new farm, my birds did splendidly, and the next year I moved my incubators, and I just tumbled over a precipice. That brings me to the point that there must have been something in the condition in the one case different to the other that made a failure; and the question is, what was this contrast in conditions? You may ask, did I ever try running my machine as I did originally? Perhaps it will surprise you if I tell you that it has taken me about four years to find out how I did run them originally, although I kept accurate record of how I did run them. There are so many variations in the application of moisture, ventilation, and temperature that it is not easy to go right back to original methods. There was to my mind a positive evidence of a lack of normal development of the chickens; they were ill nourished chicks.

The most extreme case I ever had was in an incubator where the chicks had White Diarrhoea written on their faces. I examined every egg that did not hatch, and found one chick alive and kicking, but its body was not as big as the yolk sack to which it was attached.

If that chick was to be nourished, it was with that yolk and it had to get that yolk into its system; probably its organs might exercise some influence in the assimilation of that yolk. I do not know whether they do or not. These organs are probably the first part of the chick developed. The lack of the assimilation of this yolk showed that the chick had not actively fed on that nourishment, and that is probably the reason a good many chicks do not kick themselves free from the shell; even if they do kick themselves free from the shells they are still ill nourished to such an extent that their vigor and stamina have been spoiled to a certain extent.

Now, if you go into your garden and you have a row of plants; here is a rugged, vigorous, growing plant, and her is a weak plant that has not

substance and soil to give it vigorous growth, and it is thin and pale. What do you nearly always find? You will find this weak stalk covered with insects, and they won't attack a strong one; they know the stalk that is weak and tender and they attack it. This is an illustration of insects finding a weak plant and attacking it; they may go on to the strong plant, but they find it tough, and leave it alone. And that just brings us to the point of difference—if there is any difference, but I do not think there is any conflict between Dr. Morse's position and mine; because one cannot shut one's eyes to scientific facts, nor can one shut one's eyes to what one has observed. Dr. Morse's observation of this subject is limited. I am perfectly willing to say mine is also limited. I lack the opportunity of scientific investigation, except what I have had through being associated with the professors here and with some medical men in Toronto who have used the microscope. Dr. Wagner has been a very great friend of mine, and he is a demonstrator at the Toronto University. He has frequently come to my farm and discussed these matters with me. On the other hand, Dr. Morse wants knowledge of the science of operating an incubator, and I wish he had that knowledge, because I am convinced there is something in the operation of the incubator that, in one case, will produce a strong healthy chick and in the other case a weakling.

Dr. Morse says he might find diphtheria germs in my throat; but that would not worry me. But if something occurs so that that germ gets its work in, I have then got to send for a doctor, and he tells me the trouble, and he at once applies remedies to sustain my strength and stop the ravages of the germ. I do not think that there is any cure for this trouble with the chicks, and if there is, it is going to be of very little use; because I am perfectly sure that the chicks that have an attack of that kind are poor birds to have in your stock. It is quite true that diphtheria and many of these germs are encouraged in their attack by unhealthy conditions, and it is quite true that our health inspectors try to investigate and to adopt measures to keep these unhealthy conditions from occurring; and not only are there unhealthy conditions that encourage the ravages of diphtheria, but there is the question of maintaining a healthy life, and doctors and professors may be more concerned about making the conditions healthy, while we are concerned about maintaining healthy condition in our own lives, and that is what we want to do with regard to incubation.

We are more concerned in the science of incubation so that we may know when and how to turn out a strong chick, a chick that it takes a club to kill, and that it the profitable chick. We do not want to turn out these weaklings that are so difficult to raise. I think myself that there are many little things in connection with artificial incubation that we have lost sight of and that have to be considered. We are gradually, step by step getting hold of information that will enable us to improve conditions under which we are incubating.

The question of temperature, the question of humidity, and the question of ventilation. You may have a good, strong germinating seed, but unless that seed is sown in the ground under conditions of temperature that encourage germination, germination is apt to be delayed and the seed injured and result in a poor crop. With eggs in an incubator there may be defects in the temperature and the question is what temperature we should start our eggs at in the incubator and then at what temperature we should keep the incubator at throughout the period of incubation, and I would suggest for those who would wish to experiment or who have difficulty in incubation to see if they cannot improve matters by trying a higher temperature to

start the germ. My experience has been that if I give an extra amount of heat at the start I give a vigorous character to the germ.

Then the question of ventilation. I think that is also associated with the question of carbon dioxide, and we can see how the combination of humidity and carbon dioxide may soften the shell and make it more easily assimilated so that the chick assimilates more of the lime of the egg. We know that the shell is very much harder after hatching in an incubator than the shell of an egg hatched under a hen, and so I say that the question of ventilation is associated with the question of carbon dioxide. I think it is wise to keep the ventilators closed as much as possible, especially at the early part of the hatch. I do not think they require any ventilation at all until the tenth or eleventh day, then I think you should begin to ventilate freely when the life begins to quicken and develop. Close the ventilators until the middle of the hatch and then give pretty free ventilation.

I think humidity is an essential factor in the question of incubation, and we should moisten more at the early part of the hatch than the latter part, and I have hatched good chicks without humidity at the early part of the hatch.

I should not take more time. Dr. Morse is here and I wish to give him an opportunity to say as much as he can, and I hope you will forgive me for taking up the time I have in putting before you just that difference between Dr. Morse's position and mine. I am not at all antagonistic to his position, I entirely agree with all the work he has done, but I think the crucical point is not that the *Coccidium tenellum* is present, but that the *Coccidium tenellum* manages to do the work it does in certain chicks and not in others. (Applause.)

Dr. Morse is going to illustrate, I understand, the same subject he presented to us before, and as you know many of us believe a good deal more through our eyes than we do through our ears. Dr. Morse is going to have that advantage over me to-night.

ILLUSTRATED ADDRESS.

By Dr. G. B. Morse, Washington, D.C.

I had supposed in coming here to-night, that we should be free from that old subject of White Diarrhoea of chicks. I could not help thinking to-night, and also yesterday morning, of the old story of the woman who was thrown into the river by her husband because, in an argument, she persisted in saying that it was "scissors" when he said it was not. It is related that the last seen of her as she went down for the last time was a hand still raised above the water's surface, with the first and second fingers held scissor fashion to testify to her unaltered belief. I begin to see why Professor Graham places Mr. Baldwin and myself together upon this subject, and why they did so at the American Poultry Association last August. When you have Mr. Baldwin and Dr. Morse upon White Diarrhoea of chicks you have the *long* and the *short* of the subject, so that when we get through with it there is no more to be said. However, I feel very safe regarding my own position. Down in the States, next Friday, they are going to celebrate the birth of a great man who was at once the saddest, most serious, yet withal, the drollest, and, perhaps, wittiest man that was ever developed upon the United States' soil. Abraham Lincoln was a wise man and said some very wise things. He was an adept at meeting difficult questions in

a most pleasant way. He was once asked how long a man's legs ought to be. Mr. Lincoln replied that he had never studied the question carefully, but that just on the moment's thought he would say, "they ought to be long enough to comfortably reach the ground."

Now, ladies and gentlemen, I want to say to-night that even though I do of necessity represent the short of it, still I am happy to say that I am quite satisfied that, in regard to this question of White Diarrhoea in chicks, my legs are long enough to reach the ground. They reach scientific ground, and on that ground I am willing to stand.

Dr. Morse then illustrated by lantern slides the points he had made in his former address.

The CHAIRMAN: I am sure we have enjoyed Dr. Morse's illustrated lecture and the presentation of his case, and we thank him for it very sincerely. I now declare the convention closed.

NINTH ANNUAL REPORT

OF

The Agricultural Societies

OF ONTARIO

AND OF THE CONVENTION OF THE

Ontario Association of Fairs and Exhibitions

FOR THE YEAR

1909.

(PUBLISHED BY THE ONTARIO DEPARTMENT OF AGRICULTURE.)

PRINTED BY ORDER OF

THE LEGISLATIVE ASSEMBLY OF ONTARIO.

TORONTO:
Printed by L. K. CAMERON, Printer to the King's Most Excellent Majesty.
1909.

WARWICK BRO'S & RUTTER, Limited, Printers,
TORONTO.

To the Honourable JOHN MORISON GIBSON, K.C., LL.D., etc. etc.
Lieutenant-Governor of the Province of Ontario.

May it Please Your Honour:

I have the honour to present herewith for the consideration of Your Honour the Report of the Agricultural Societies of Ontario for the year 1909.

Respectfully yours,

JAMES S. DUFF,
Minister of Agriculture.

Toronto, 1909.

CONTENTS

ONTARIO ASSOCIATION OF FAIRS AND EXHIBITIONS.

	Page.
Officers for 1909	7
Annual Convention	9
President's Address: Wm. Laidlaw	9
Report of Superintendent: J. Lockie Wilson	12
Report of Western District Association: John Farrel	18
Report of Central Fairs Association: Dr. J. U. Simmons	27
Address: Hon. J. S. Duff	27
Should an Entry Fee be charged on Exhibits? John E. Roxburgh	29
Judges, and Ideals in Judging; Prof. G. E. Day	35
Distribution of the Government Grant: Dr. Wm. MacGuire	40
Auditors' Report	48
Plowing Matches: J. W. Sangster	48
Should the Plowing Match be Revived? J. W. Wheaton	52
Police Protection in Rural Districts: A. J. Russell	57
Best way to secure the proper number of Qualified Judges: R. S. Hamer	63
Application for Increased Government Grant	65
Growing better field crops in Ontario: Prof. C. A. Zavitz	76
Grain Exhibit from Standing Field Crops Competition: Prof. L. S. Klinck	81
Eggs and Poultry: A. G. Gilbert	86
Poultry Exhibits: How they can be Improved	89
Housing Exhibition Poultry in Winter	101
Notes	104
Scale of Points for Fowls	107
Amendments to Agricultural Societies Acts	107
List of Delegates to Convention	109
Comparative Statement of Grants for Agricultural Societies for 1908 and 1909	111
Reports of State Societies	115
Financial Reports of Agricultural Societies	116
Analysis of Prize Money paid by Agricultural Societies	126
Dates of Fairs and Exhibitions, 1909	183

ANNUAL REPORT

OF THE

Agricultural Societies of Ontario, 1909.

To the Honourable James S. Duff, *Minister of Agriculture.*

Sir,—I have the honour to present the report of the Ninth Annual Convention of the Ontario Association of Fairs and Exhibitions for the year 1909. This Association is the central organization of the Agricultural Societies of Ontario, and a study of the report shows the rapid strides that these Societies have made in the last two years, since the change in the Act, which is working satisfactorily to all concerned.

The financial statements of all the Societies in the Province for the past year are appended, together with the amounts paid for prizes in the different classes, and a comparative statement of Legislative grants for 1908 and 1909.

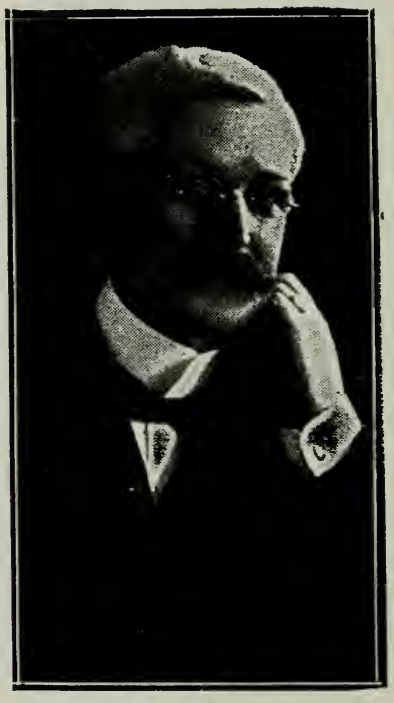
The Standing Field Crop Competition, inaugurated by this branch of the Department of Agriculture have met with the approval of the farmers of Ontario. The scores of the prize winners of the grain from the winning fields shown at Guelph and Ottawa Winter Fairs are included. All of which is respectfully submitted.

Faithfully yours,

J. Lockie Wilson,
Superintendent.

ONTARIO ASSOCIATION OF FAIRS AND EXHIBITIONS
OFFICERS FOR 1909.

President ..... H. J. Gould, Uxbridge.
1st Vice-President ..... J. U. Simmons, M. D., Frankford.
2nd. Vice-President..... Geo. E. Lee, Highgate.
Secretary and Editor..... J. Lockie Wilson, Toronto.
Treasurer..... Alex. McFarlane, Otterville.



H. J. GOULD, President.

Auditors

Wm. Collins, Peterboro. Robt. E. Cowan, Galt.

Executive Committee.

Robt, E. Cowan, Galt. R. H. Leary, Peterboro.
Jno, Farrell, Forest. J. Thos. Murphy, Simcoe.
Wm. Laidlaw, Guelph. Jno. D. Orr, Meadowvale.
J. W. Sheppard, Cayuga.

The Honourable JAMES S. DUFF, Minister of Agriculture, Ontario.

ONTARIO ASSOCIATION OF FAIRS AND EXHIBITIONS.

NINTH ANNUAL CONVENTION.

By far the largest and most enthusiastic convention ever held by this Association was that which assembled in the Council room of the City Hall, Toronto, February 10th, and 11th, 1909. After the registration of the delegates the meeting was called to order by the President, Wm. Laidlaw, Guelph, who proceeded at once to deliver his address.

PRESIDENT'S ADDRESS.

By Wm. Laidlaw, Guelph.

It is my duty to thank the delegates for their large attendance at this meeting. I have been connected with this Association fifteen years, and, I have never seen a larger and more intelligent gathering of delegates. I am glad that the Agricultural Societies throughout the Province are recognizing that it is an important thing to meet in this way. I do not think any body of men large or small, can come together without good being done to each individual present, as well as to the community. The splendid programme which has been prepared by Mr. Lockie Wilson almost precludes a set speech from me. However, since it is my privilege, it may not be out of place if I make some reference to certain matters pertaining to the welfare of our country. These remarks will be general.

Whatever benefits may come to us as delegates from meeting together here, there is one thing which stands out preeminently, and that is its educational feature. When we consider for a moment the position which we in Canada hold in reference to other countries, we must open our eyes wide to observe the great possibilities that we have, and then, seeing these, we must be prepared to face them as they are.

Within the last twelve months British capitalists have invested in Canada in bonds and debentures over $200,000,000. Now when we consider that these men are investing that large amount of money in our country we must conclude that they see a bright future for this Canada of ours. With our splendid systems of transportation, our magnificent agricultural resources, our enormous mineral wealth, we have the foundation of the building of a great nation. There is no asset which means so much for the building up of a nation as its people. We have not only to realize our possibilties, but we must use them to the best advantage. In a young country, such as ours, of extended area, magnificent waterways, almost limitless natural resources, the possibilities of nation-building are so great that it is the height of wisdom to exercise care in making secure the foundation. It behooves us to watch the development of our country well, to look to the education of the young people of our country, that they should become strong physically and mentally. Professional men by reason of their training enjoy a distinct advantage; and this educational side of the question must not be overlooked. We as agriculturists are not taking a strong enough hold; we are not sufficiently represented in our deliberative bodies, and on this account we, perhaps, are

not making a better showing in our particular line. Agriculturists should be the aristocracy in the broad sense. Ours is a nation that will last forever, and our great natural resources will make it the greatest country in the world. We have here the possibilities for building up one of the most solid countries from all points of view, but we must be careful to bring the very best to the front, in the development of our agricultural resources. We must produce the best, because by so doing we command the highest prices in the markets of the world. When our goods are shipped to Great Britain and compared with productions of the other countries it is only by having something better than they have that we can hope to hold our own in the markets of the world. Agricultural Societies of our Dominion can wield a very powerful influence on the building up of our nation. One thing that is going to have a very far-reaching influence in the near future, and for all time to come, is the planting of the best seed. It is only in that way that we can hope to obtain the best results. The Standing Field Crop Competitions, inaugurated last year, are doing splendid work wherever farmers are taking advantage of the grants made by the Government for this purpose. It is only by increasing the acreage of the land, the products of our farms and keeping better stock that we can hope to accomplish our aim. The Dominion Government has been granting $50,000 a year to various Exhibitions, held alternately in Eastern and Western Canada. There seems to be some disposition on the part of the Government to withold that grant this year, and it has been suggested to me that we should approach the Dominion Government and ask them to apportion it among the Agricultural Societies in this Province. I do not see any reason why we should not receive from the Dominion Government a good large sum of money each year to help to develop Agricultural Societies.

Our congratulations we extend to our new Minister of Agriculture, the Hon. J. S. Duff. In the Province of Ontario and in the Dominion of Canada we have been very fortunate in having good men to work in our interest; such men as Jno. Dryden, Nelson Monteith, and in Ottawa, John Carling and Sydney Fisher, and I am sure that Mr. Duff will take no second place to any of them.

Our thanks are also due to our esteemed Secretary, J. Lockie Wilson, for his untiring efforts, and the great amount of time and energy expended by him in connection with this work. The members of the Agricultural Societies all over the Province are beginning to feel that they have a more important mission to perform than they dreamed of in the past.

I hope when the programme is proceeded with that there will be full and free discussion on the various points which will be brought up. I thank you very much for the courteous hearing you have extended to me.

H. J. Gould: We all agree upon one point, and that is that we live in God's country, and the best on top of the whole earth. The matter of Standing Field Crop Competitions touched on by the President is one well worthy of our serious consideration, and no doubt it will be taken up by our Societies. We are here to-day for the purpose of discussing matters pertaining to our Fairs and Exhibitions, and there will be some important mat ers before us, especially in regard to the $50,000 grant which the Dominion Government has been distributing to the different Provinces. I think that is a good move. It has been suggested to me that this body should select a committee to wait upon the Government at Ottawa and present our claims in regard to this matter. Whether that would have a greater influence than a strong resolution endorsed by this whole delegation I am not prepared to say. However, it would save the expense of a delegation to Ottawa. and I have no doubt it would have pretty nearly as much weight.

In regard to our new Minister, I have no doubt that he will be a worthy successor to those who have filled the office before him. I wish to pay my respects to the Ex-Minister of Agriculture. We have had something to do with the Hon. Mr. Monteith in regard to the affairs of this Association, and he has always treated us well, and did all he could to further the interests of the Agricultural Societies of this Province.

A DELEGATE: In regard to the Dominion Government grant, that is the most important question that we can discuss in the President's address. I have been thinking about that matter, and am very sorry I cannot put it before this meeting just as strongly as it ought to be put. I believe the proper way to proceed in reference to this grant is to ask our Secretary to get a petition sent to every Agricultural Society and get that signed by the Directors, and it is possible to get the whole membership of the Agricultural Societies in the Province of Ontario on such a petition if it is properly gone about. The farmer is noted for not asking for anything; at the same time he must realize that he has got an organization to ask through. It is our impression that the Agricultural Society is one of the best organized societies in the Dominion of Canada, and we can reach the Government easier through it than in any other way, and if we make a united effort I feel certain we can succeed. Let the voice of the agriculturist be heard in Ottawa for once. Try the experiment. It is the easiest thing in the world to get if we place our views before the Government.

W. S. SCOTT: In reference to the Standing Field Crop Competitions, our Society went into it, and we found it to be one of the most successful educational features of our work, and every Society should take this matter up. At our annual meeting this year this work was discussed and there was not one vote against it. These competitions are very important matters, and prolific of much good.

W. CHANNON: We held a competition in Victoria County and it was very successful, and credit is due to Mr. Wilson for his efforts in this connection. It is going to do a great deal of good in the County of Victoria. Some of the oats that won a prize in this competition were sold as high as $2.50 a bushel, and the seed is largely in demand. It is a move in the right direction.

A. C. GRAHAM: No better institution has been created in connection with the Agricultural Societies than the Standing Field Crop Competitions. It enthuses the young and old.

C. L. STEPHENS: I have been greatly impressed, and feel very strongly upon the question in regard to the large number of lives lost in this Province at railway crossings. Only a couple of weeks ago, two farmers driving home with their families lost their lives at one of these unguarded crossings. This is a representative gathering of farmers, and we should place ourselves on record as to what we think in reference to this important question. The Dominion Government, I understand, are now discussing the level crossing question, and we ought to take the matter up in the form of a resolution to be presented to the Government in regard to this matter.

W. H. HAMILTON: What we have to impress upon both Governments is the fact that Agricultural Societies are the best means of advancing and promoting the interests of this country. Appropriations are given to other Associations that have not been as useful. The Agricultural Societies of the Province of Ontario, if rightly conducted, are the best and surest means of utilizing any appropriations for the best benefit of the Province.

The PRESIDENT: We might have a resolution put forth in reference to level crossings. Some action should be taken with reference to the $50,000 grant. We should appoint a committee to draft resolutions in regard to the grant, and also the level crossings. I would name on that committee Neil McDougall, H. A. Dolson, and C. L. Stephens, with reference to the level crossing question, and R. H. Leary and J. D. Orr, in connection with the matter of the $50,000 grant. The name of Mr. J. Lockie Wilson was added to both committees. The object of these committees will be to draft resolutions to be presented to the Dominion Government in reference to level crossings, to strengthen their hands at the present time, when the matter is being urged upon them. It is certainly a very necessary and important thing. These resolutions may be prepared and handed in to-morrow morning, when no doubt they will be passed unanimously.

REPORT OF SUPERINTENDENT.

By J. LOCKIE WILSON, TORONTO.

I am delighted to see so many of the stalwart representatives of the farmers of Ontario here to-day. Starting my second year as your Superintendent, I have to thank you all very kindly for the hearty manner in which you have assisted every effort that I have tried to make in your interests. I have always had your co-operation in everything undertaken, and we have succeeded in doing some things that have materially benefitted the farmers. I have to congratulate you on the fact that the year 1908 was the most successful in the history of Agricultural Societies. Never has such enthusiasm been manifested; never have the gate receipts of the Societies been so large nor the Exhibits so numerous and up-to-date. In many instances the increase in gate receipts and exhibits has run up to 40 and 50 per cent according to returns made to the Department. This is an assurance to you and to the world that the farmers of the Province of Ontario are marching onward and upward with rapid strides. Congratulations are due the secretaries of these Societies in the Province for the splendid work they are doing. In my first year there was some dilatoriness on the part of many officers in reference to their reports. This caused a great loss of time and expense in trying to get them to make their returns promptly. I am glad to say there is a noticeable improvement in this respect, and the majority of them are now forwarding their returns promptly and filled out in proper form. Unless I receive them in time, our Annual Report is delayed as well as the apportioning of grants. I am glad to note that the educational features of our Societies are being brought more to the front.

There has beeen a great deal of discussion throughout the country and rural press lately urging farmers to organize. Did you ever stop to think that you have within yourselves in your Agricultural Societies one of the most complete organizations that any community could desire? Have the members of Agricultural Societies ever considered what you were organized for? In order that there be no misunderstanding in future as to this, let me quote the Act that defines clearly what these objects are:—

9. (1) The objects of agricultural societies shall be to promote improvement in agriculture, horticulture, arboriculture, domestic industry, manufactures and the useful arts;

(*a*) By awarding premiums for live stock (other than grade breeding males), for agricultural or horticultural implements and machinery, for the production of grain and of all kinds of vegetables, plants, flowers, fruits, home manufactures, and generally for excellence in any agricultural or horticultural production or operation, article of manufacture or work of art.

(*b*) By organizing ploughing matches, holding seed fairs, spring stallion and bull shows, competitions respecting standing crops, and for the best or best managed farms.

(*c*) By importing or otherwise procuring for the purpose of owning and distributing pure bred registered animals, and seeds and plants of new and valuable kinds.

(*d*) By promoting the circulation of agricultural periodicals.

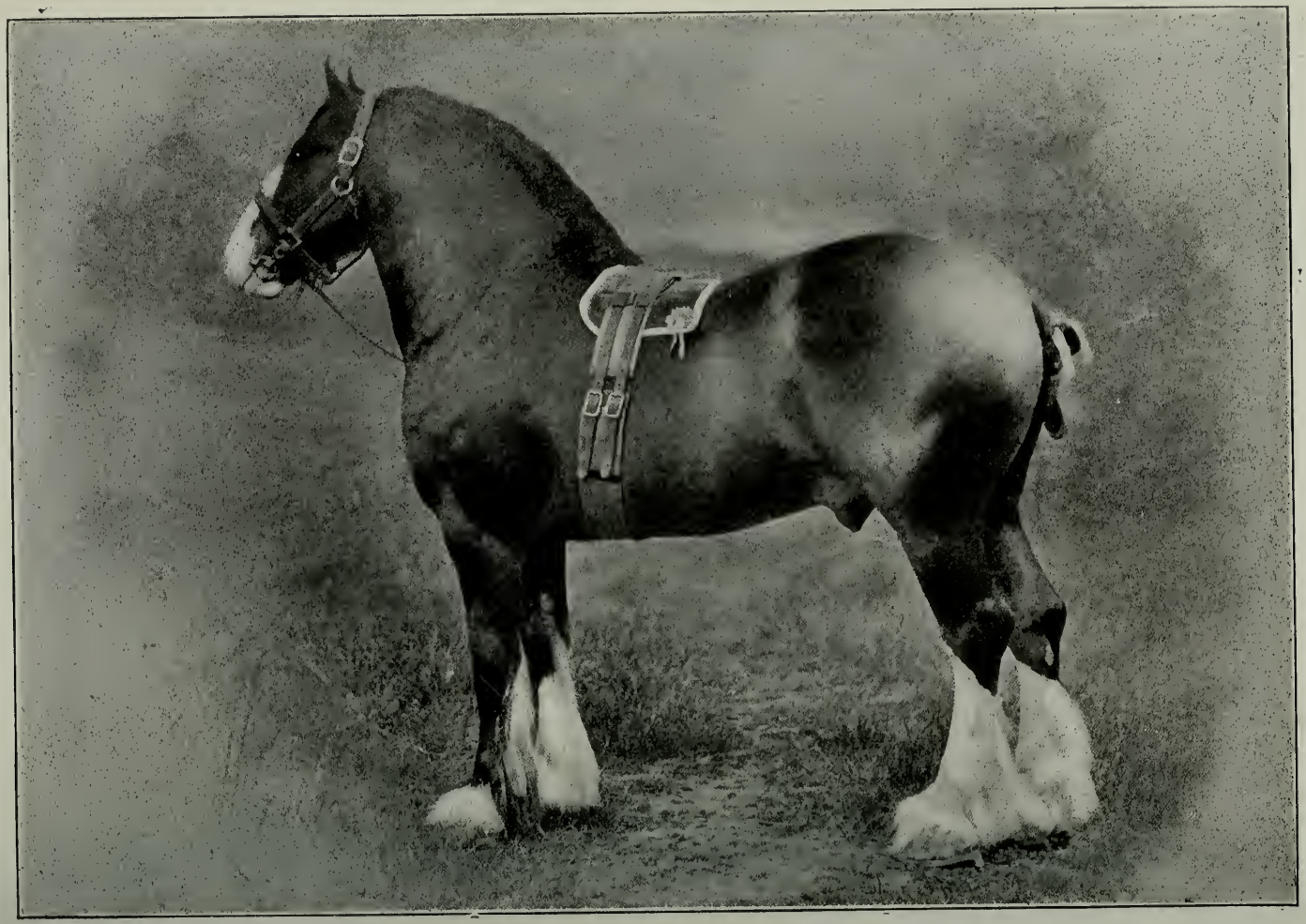
(*e*) By offering prizes for essays on questions of scientific inquiry relating to agriculture, horticulture, domestic industries, manufactures and the useful arts.

(*f*) By taking action to eradicate poisonous and noxious insects and weeds.

You will notice that the field is a wide one, and there can be no objection to your extending this along further co-operative lines.

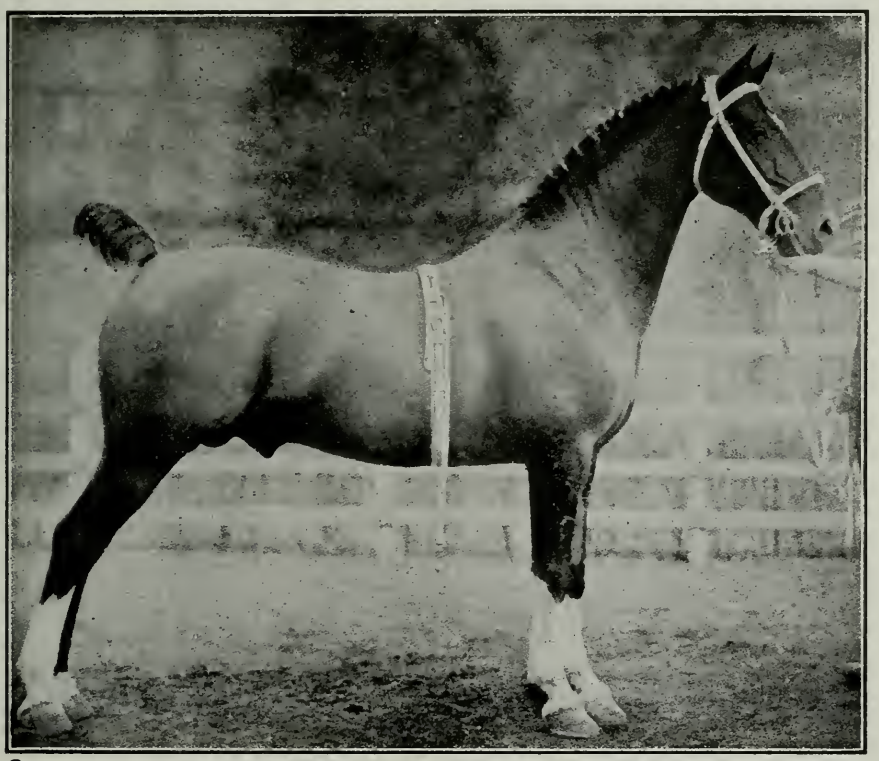
The object of the Agricultural Societies is that these organizations should be utilized for anything and everything that pertains to the best interests of the farmers of this country. There is no reason why with the sum of $90,000 a year of a grant to help you, you should not have the finest organization of any country in the world.

The questions that are likely to arise in your particular localities to be discussed are those affecting the interests of the farmers generally of Ontario and Canada. I see no reason why an Agricultural Society should not meet at least every two months—meet as other organizations do to talk over your own business and see what would be conducive to your best interests, to discuss questions along co-operative lines, and endeavor to discover the kinds of grain and stock best suited for your locality. Arrange to become a community noted for special lines of agriculture, so that your locality will become famous as producing large quantities of the special products best suited to your soil and climate. Where these special products are to be had in abundance there will buyers congregate. When the Field Crop Competitions were inaugurated two years ago ten societies entered and $1,000 were expended for prizes. Last year this was increased to $3,000, and instead of ten, forty-seven societies competed, and six hundred and fifty farmers in the Province took part. The result has been that many of the prize winning farmers got prices for grain averaging in many cases over 100 per cent above market prices. Another forward step was taken last year by offering the following substantial prizes at the Winter Fairs at Guelph and Ottawa for two bushel sacks of grain from the winning fields, viz: $35, $30, $20, $15, $10 and $5. We supplied neatly stencilled sacks, and they made an excellent display at Guelph and Ottawa, and were a very attractive feature. After the Fairs were over we had a large number of inquiries for the addresses of the grain prize winners at Ottawa and Guelph. We were able to place several orders for a large quantity of grain at 100 per cent above the market price. Last year there were raised 100,000,000 bushels of oats which sold at from thirty-five to fifty cents a bushel. Now many of the prize winners in these standing field crop competitions received from $1.25 to $2.50 per bushel for their oats. If we can succeed in increasing the value but ten cents per bushel it would add $10,000,000. to the amount received annually for the oat crops alone by the agriculturists of Ontario, not to speak of the increased amount produced per acre by careful selection of seed grain and improved methods of cultivation. The work that is being done in this connection for the farmers is not only meeting with your approval but with that of the Government, and I am confident that we shall be successful in getting an increased grant again this year for the furthering of a work that is having such beneficial results to all concerned. I doubt whether in all the years Government grants made to Agricultural Societies have proved more profitable.



"Baron's Pride." A sire of many splendid Clydesdales.

In connection with these Field Crop Competitions, we had an auction sale of the grain exhibited at Guelph and Ottawa from the prize winning fields which was not successful in the grain competitions at the Winter Fairs. This grain was sold at 90 per cent over the market price and the amounts realized returned to the exhibitors. The number of seed fairs last year was largely increased. In order to extend the work of the Field Crop Competitions, at my suggestion, the Directors of the Canadian National Exhibition have agreed to offer substantial prizes for a sheaf exhibit from the winning fields of the Province this fall. In order that all the different sections of Ontario might compete on equitable terms, the Province will be divided into three sections, East, Central, and West. These sheaf exhibits will be retained by



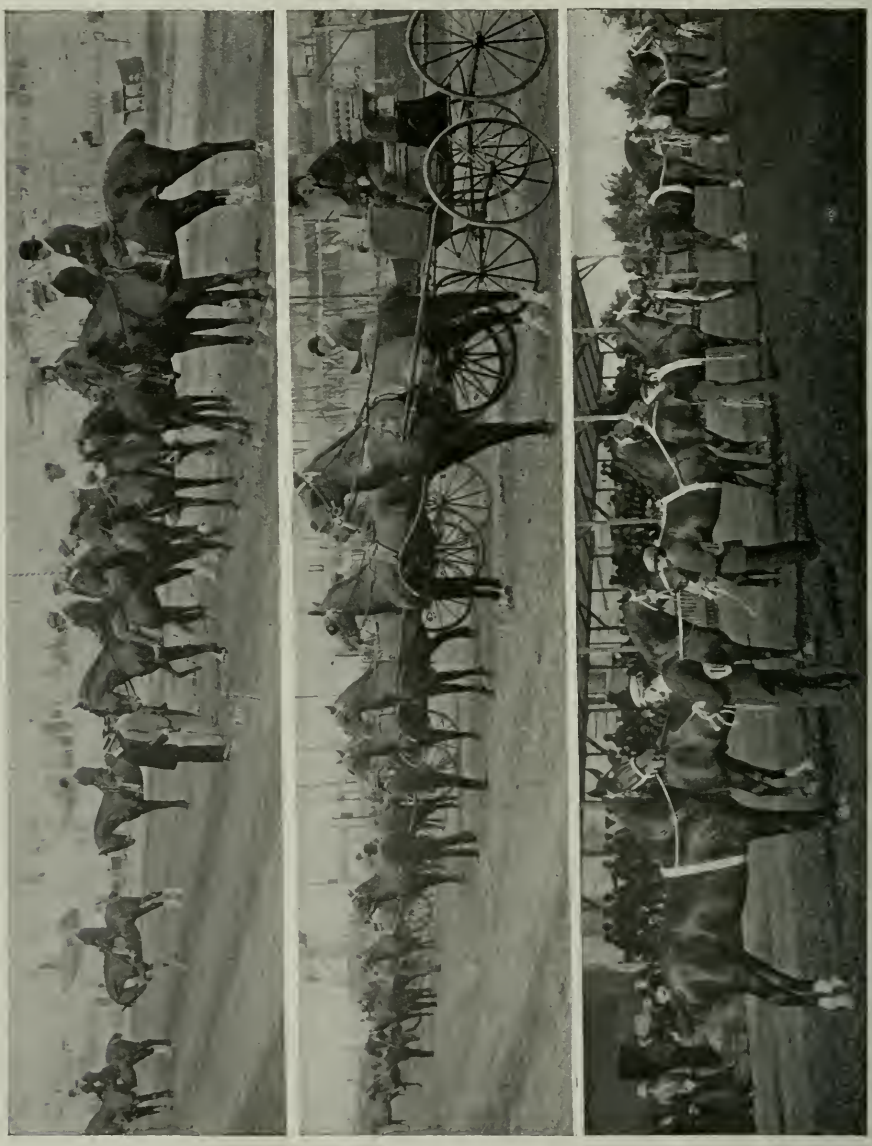
Hackney.

the Department of Agriculture, to be used at exhibitions in European countries, to show what our Province can produce. This sheaf exhibit should prove of educational value to the children of the exhibitors, who will, doubtless, become interested in selecting the finest stems and heads of grain while these are growing in the field. The work done by the farmer boys in this connection should be remembered by their parents when the prize money is awarded.

There has been in this Province a drifting away from the real work of the Agricultural Societies. In their zeal to increase gate receipts some societies have devoted too much attention to special attractions, and have overlooked the educational features for which societies were organized. I know of one Agricultural Society in this Province that spent $1,600 in special attractions.

How many farmer boys and girls who saw those contortionists and high kickers received any material benefit? Something higher than increased gate receipts should be our aim.

Some Societies are giving prizes that the children can compete for, such as for poultry raised by themselves. Others might be offered to the child who puts up the finest collection of weeds, or for the finest collection of wild



Light horses being judged.

flowers, properly named. Prizes could also be offered for essays on weeds and best method of destroying them, to be competed for by children of the rural schools, also for the best selection of fruit, roots, vegetables, and selected sheaves of the different kinds of grain grown on the farms of their parents or on their own special plots. This work would prove of high educational

value, and tend to interest the boys and girls of rural sections. A barrel of mixed varieties of apples might be utilized and the boys or girls naming the largest number correctly would receive the prizes; With exhibits of poultry might go a declaration from the parents that the birds were raised and cared for by the children themselves.

I would again call your attention to the fact that many societies have not yet had enterprise enough to arrange for proper judging rings for stock. It is impossible for our judges, however capable they may be, to do good work when the animals they have to judge are closely surrounded by a crowd of eager onlookers. An hour's work, a few stakes, and a piece of hay-fork rope would be all that is necessary, and I hope that you will see to it that this is not overlooked in the future. Complaints have also been made that pigs and sheep were exhibited in crates on waggons. It is impossible under such circumstances to place awards properly. It is the duty of Directors to supply a simply-made bridge so that animals could be unloaded easily.

Societies which hold no exhibition, but devote their funds to the purchase and maintenance of pure-bred stock, continue to do good work. I would recommend that those which are not making a success of holding exhibitions should turn their attention in this direction.

In 1907 we sent out 178 Departmental Judges. Last year the number was increased to 222, so that you can readily see that our judging system is continuing to grow, and is meeting with the approval of members of societies all over the Province. While, occasionally, we receive complaints from Directors finding fault with decisions of our judges, these cases are rare. Complaints in this regard are at times fully warranted. In such cases we endeavor to make the fullest enquiry, and, when justification is proved, the judge concerned is at once struck off the list. Our judges may and do make mistakes, they are but human, but I have not the slightest doubt but that the departmental judge system is a forward step; and we look onward to the time when the judges of this country will get certificates as to their qualification. We have not reached that stage yet, but I think in the near future many of our farmers will receive diplomas, and when that time arrives, the judging system will be improved. Last year, however, very few complaints were made against the judges. Some were justifiably made, and those complained against after the most careful investigation were struck from the list.

Complaints have been made to the Department that Directors of some of the Agricultural Societies in the Province have been allowing "wheels of fortune" and gambling devices to be operated on their grounds. These breaches of the law must be stopped, and Boards of Directors who allow such illegal practices are liable to punishment.

A number of years ago ploughing matches were a distinctive feature in many of the Societies, and they certainly were of educational value. They brought the farmers together for one thing, and discussions were frequent as to the best methods of cultivating the different soils. Some Societies still hold them, and no doubt, you will listen with a good deal of interest to the addresses to be given on this subject by Messrs. Wheaton and Sangster.

Each year a number of societies have been having bad weather on the days when their fairs were held, and, as a consequence, the gate receipts were small and their finances crippled. I believe that some simple form of insurance could be arranged to meet such cases. I would suggest that all societies in the Province be requested to pay a certain sum each year into a fund to be used solely to meet these particular emergencies. If each society in the Province contributed, say $5 annually, a sum of about $1,800 would be available. On the sworn declaration of the President and Treas-

urer, the amounts payable to any one society, the receipts of which had been affected by the weather conditions, might be apportioned on the basis, say, of 50 per cent. of the average gate receipts of the previous three years. In the event of there not being sufficient funds on hand the amount might be proportionately distributed. Any surplus funds after the apportionments had been made could be carried over as a nucleus for the next year's needs. The Treasurer of our Association might be made the custodian of this money. Only societies which contributed to this fund would be eligible to participate. It would be necessary that at least one-half of the societies of the Province should agree to co-operate in order to make it a success. I bring this matter before you in this somewhat crude shape, leaving you to work out the details, if you are in favour of the proposition.

I hope that great good will result from the convening together of the farmers in this way from all parts of the Province of Ontario. This is the biggest gathering, probably, that ever convened in this City Hall. We must all take up enthusiastically and earnestly the great work we have to do, for our to-days and yesterdays are the blocks with which we build. We must

"Act in the living present,
Heart within and God o'erhead."

Among the many young men here to-day, we have a number on whose heads the snows of many winters have fallen. Each and all are working for the uplift of the farmers of Canada in an effort to place our Agricultural Societies on a higher plane by increasing their influence and usefulness by honest and straightforward endeavor to usher in the dawning of brighter, better days for the fairs and exhibitions of the Province of Ontario.

REPORT OF WESTERN DISTRICT ASSOCIATION.

By John Farrell, Forest.

I wish to congratulate the Association upon the Executive Board that they elected last year. They have certainly done their duty faithfully. A great deal of credit is also due to our Superintendent for the manner in which he has discharged his duties. We have in the west an organization known as the Western District Association. We meet monthly, reports are submitted and the general conditions and progress of our organization discussed. Our cash balance is on the right side, which is very encouraging. In places where fairs are held, especially in districts where a county has ten or twelve, as we have in some parts of Western Ontario, it is somewhat difficult to get them running along smooth lines. We ask the societies to send a representative to some central point, and there to select a Board to manage matters in connection with the various societies. When live men of commonsense in a district meet, you are going to accomplish good work. There is a very kindly feeling existing between all the fairs in our part of the country. We furnish them with advertising material. A large poster is got out by the District Board, and on it are the dates of each fair and their specialties. The Secretary of the Western Fairs Association sends, probably, one hundred bills to each society until the whole distribution is made. If you send a bill of your own fair over to a neighbor who is a competitor, he will probably not take the best care of it, or see that the bills are posted up, but when his advertisement is upon this bill, then he is inter-

[19]

ested, and will have the bills put up and looked after. This has proved a profitable and cheap plan of advertising. So far as expert judges are concerned, it may be easy for the Superintendent to arrange to send us judges, but we don't quite agree with the manner in which he handled us last year. No doubt he did the best he could under the circumstances. In a district where a number of expert judges are constantly going from one fair to the other, one day at a fair here and to-morrow eight or ten miles away, if an exhibitor is at that place and that expert judge passes his judgment, and he is going to be at the next fair, and the exhibitor intends to be there, what is the result? He says, "I am not going to that other fair." We found it to work detrimentally to us in that particular. Judges should be changed frequently, so that a man exhibiting stock day after day would have somebody else to pass judgment on them instead of the same set of judges from beginning to end. This is a matter in which we are all deeply interested. We want the person that is entitled to first place to get that honor. I certainly hope that the Superintendent in his good judgment—and we know that he is endowed with a large share—will be enabled to help us in that particular and move these judges from the Western District over to the Central, and finally let them complete their work in the East, and let the Eastern men come to the Central and West.

There is another matter that I wish to bring up for your consideration to-day, and I think it is one that will appeal to every agriculturist in this hall. At the beginning of this meeting a gentleman spoke of level crossings and the loss by death occasioned thereby. But there is another matter that is agitating the minds of every man in this country who is a true Canadian, and that is Law Reform. Law Reform is a question that appeals to every man in this whole Province of Ontario. You know what has been the trouble in the past. No doubt some of you have had occasion to take disputed matters into the court, and what is the result? You have been dragged on from court to court until finally your means have been exhausted, and you have been forced upon your knees, and, consequently, justice has not been meted out to you. You will understand how deeply the legal profession is interested in this subject, and a short time ago they held a meeting and sent their delegates to the Legislature and there placed their views before them and asked them not to amend these things. Why? Simply because they were working in the interests of their profession, and they were trying to bring force to bear upon the Government of this country to show how they could protest if an attempt was made to simplify legislation in that particular. If you would follow out my advice, or part of it, you would pass a resolution this afternoon to strengthen the hands of the Attorney-General of this Province. We should approve of legislation here or elsewhere that will be to the interests of the agriculturists generally. It is a matter in which we are all deeply interested. I will read you a little extract from a daily paper with reference to this matter: "The cost of litigation should be lessened, delays should be made less frequent, and the public generally should have greater satisfaction with the final judgment given. We are anxious to get the views not only of the judges and lawyers, but of laymen, and their views will be well considered. We shall be glad to consider all questions, but in my opinion the time is ripe for a measure, and it will be duly introduced." This statement was made by the Hon. J. J. Foy to the Ontario Bar Deputation recently. Now is the time for you to put forth your views, and show that you are interested as well as they. It was suggested when this was first drawn up that there should be one final Appeal Court and no more. The public should receive a greater amount of

justice than they do at present. This matter ought to be dealt with by this Association.

The PRESIDENT: If you see fit to pass a resolution regarding the matter of Law Reform no doubt it will be taken up and acted upon. It is certainly a very important matter. Further discussion upon Mr. Wilson's report will now be in order.

WM. HICKSON: There are a great many questions of importance in that report. Our Superintendent has been energetic, and has a pretty broad vision, as displayed in his very interesting address. In the matter of Field Crop Competitions, we were one of the societies that entered the first year, and the result was very satisfactory, and the prices ran up to $2.30 a bushel for oats. We went into it again this year, and we did fairly well, the prize winner getting as high as $2.50 for his oats. We sent two lots to Guelph and four to Ottawa, and received four prizes. Now, what is the result? We are to have a Seed Fair shortly, and farmers have been asking all kinds of questions about the growing of these prize winning grains. Last year at our Seed Fair we had no less than fifteen different samples of white oats, and it was practically the result of the Field Crop Competitions. I would like to emphasize the fact that the small societies have just as clean land as the large ones, and in many cases a great deal cleaner. These competitions are going to keep out noxious weeds, which are only too plentiful in all parts of the Province. Near where I live there is a careless farmer, and on his farm grow the only thistles in the district, and the seed of these is allowed to blow broadcast over the country side, creating untold damage. Our Superintendent spoke about co-operative work. We inaugurated that system about three years ago. We have a Pure-Bred Stock Association, a Seed Fair and Field Crop Competitions, all working together. Before we went into this I had to go round and canvass members to come into the society; I do not need to do that now; they are only too anxious to become members and take part in the good work we are doing. Now as to the educational part, that is an important matter. I had the honor to teach school for twenty years, and I know something about children. I have taken a great deal of trouble in connection with the agricultural work in my district in order to get the boys and girls interested. Every fall for the last three years I have had a number of children collecting these noxious weeds of every kind, and we gave prizes at the Fall Fair for the best exhibit of them. As regards judging, we have a system that is very interesting; we have a boys' judging class. We do not allow any boy to enter that is over 18, and they must be sons of the members. I advise every society to try something in the way of these educational features. When you get boys and girls taking an interest in these various matters you are bound to get intelligent farmers. They must be trained in the right direction. This is the only means by which we can hope to have ideal farmers.

A. C. GRIFFIN: As regards expert judges, we have employed them in our society for a number of years, and in some instances they proved very satisfactory, but in a few, not so much so. It is rather a hard matter, however, to throw a man down because of an error in judgment. I would like this convention to emphasize forcibly that the expert judges be on the ground in time. For the last few years our society has been delayed until a very late hour in the day.

J. LOCKIE WILSON: That point is well taken. We try to get our judges impressed with the idea that they must be there in good time in the forenoon to start their work promptly. In sending out two or three hundred

judges to different parts of the Province there is apt to be occasional delay, but I endeavour to impress upon them that they must be there on time. In regard to what a delegate has said as to having judges changed, and sent to fairs far apart, that may appear an easy matter, but you must remember that my appropriation for judges is limited, and if I take a judge from one place and send him past other fairs to a district many miles distant, the expense is materially increased. If you are not prepared to pay the additional expense involved, the other alternative is to get an increased appropriation for this work.

A. C. Griffin: How are judges appointed?

J. Lockie Wilson: When a man is recommended as judge, I write at once and ask him to send me the names of at least three reputable breeders of the class of stock which he claims to be capable of judging. When I receive satisfactory recommendations from these breeders, the man recommended goes on the list. If, on the other hand, they do not recommend him, he is not employed. I would not, knowingly, appoint a man a judge who was not fair and honest and fully competent in every respect. We have to be careful to select good, reliable, and unbiased judges, because I think it would be a crime against humanity for a man to give an unfair decision.

J. Brockbank: Perhaps we do not always give satisfaction; we cannot always satisfy ourselves. You cannot give satisfaction to others and to yourself if you have no ring to judge in. I defy any man to do it. I do not care who he is. You cannot see the right gait of a horse at all, because people will get between you and the horses or cattle or whatever is being judged. I hope the societies will be stimulated to have rings so that you can judge the horses without difficulty. And there is another point about showing horses. The trouble is that young men when they are breaking in colts do not know how to handle them. If you are training colts, teach them to go straight and not trot round in a circle; then you will get the best results. Any man who would give a prize to an exhibitor, knowing it was wrong, would be a thief. A man has a better chance to judge when he is in a ring; give him one to judge in, and then if he proves a failure do not employ him again.

D. Evans: I have listened to the address from the Western District Fairs' Association, represented by Mr. Farrell, and I was pleased that he referred to our expert judges. Men who take considerable interest in agricultural matters feel that our judges are yet upon trial, and we should devise some means whereby we can give the utmost satisfaction to all the societies. Now, supposing we have a man in a certain locality that has a fairly nice team, and another has got one just a shade better, and both are exhibiting at all of these fairs; if the first knows that the other man is going to travel the whole circuit, he will not care to exhibit and be beaten. That is only a matter of judgment; the man who gets second place may really have the best team. I have often seen where a team was awarded second prize that should have got first. In order to avoid that, and create an interest in each of our fairs, the better way would be to have different judges for the several fairs in a circuit, so that a man, although he may be out of it in one place, could go and attend the other fairs knowing that his stock would be brought before a different judge. That would be a distinct advantage all round.

W. Channon: The last speaker said that often a team of horses got second, when it ought to have got first. Now, that might possibly be, or it would be a matter of his opinion. Any person can judge but they don't

Getting ready for the Judging Ring, Spring Fair.

all judge correctly. Often a judge may cater to his particular opinion and do what is really just in his mind, but at the same time he may not suit some of the men who are looking on. Another thing with reference to a remark made by a delegate with reference to departmental judges who happen to be late, I would like to give the societies here a pointer: Try not to be late yourselves. The judge cannot do justice either to himself or to the fair which he is attending, because the society has no system in getting the stock on the ground at the hour named. It is very essential that the judge should be on hand promptly; at the same time, there should be no delay on the part of the society in getting the animals on the ground without undue delay.

A Delegate: In judging horses and cattle and so on, men who are capable of being judges should be able to give their opinion as to the points of merit upon which their prizes are awarded.

John Brockbank: I did that once; I will never do it again. You do not like to tell the faults of your horses or cattle to anybody else, I will tell them to you privately, never publicly.

G. L. Miller: Do not you think we are wasting a great deal of time about this question? The Department furnishes us with men to do our judging, some of whom may be no better than men in our immediate locality, but we must, of necessity, have strangers; consequently, we apply to the Department and they furnish us with judges. Mr. Wilson has explained to us the method of appointing these men, but we must not lose sight of the fact that although they receive high recommendations from prominent breeders, that does not make them experts. With regard to score cards furnished to judges upon which to give their opinion, we always furnish our judges with them, and in the Dairy Department they must make these out, giving reasons for their decisions. If I am asked if it is necessary for a judge to give his decision in the ring, I always tell him to do so if it is asked for by the exhibitors, because I think they are entitled to it.

W. E. Binning: I am very much pleased with the Superintendent's report, which contained a number of very important suggestions. The system referred to, of having insurance, is a good idea; we should all lay away something for a rainy day.

A. C. Graham: I know in our own case we often have wet weather, and it keeps the work of the society back. Mr. Wilson's suggestion is a good one. Another thing, the plowing matches we used to have years ago did a great work in teaching the boys how to plow, and so on, and it also teaches us how to grow good crops. These are things that we ought not to lose sight of. There is one part of our Superintendent's report that deserves a great deal of thought, and that is in connection with the insurance proposition; and in order to bring that more prominently before this convention for discussion, I move "That the Superintendent's insurance proposition, as stated in his report, be and is hereby endorsed and approved of by this Association, and that he is hereby requested to devise an insurance scheme for the approval and acceptance of such Agricultural Societies as wish to adopt it throughout the Province."

A. C. Griffin: This resolution is premature. Each and every society should make provision for the wet days themselves. I therefore move in amendment that this be laid over for further discussion.

P. S. Ewing: I am in favor of the proposition.

Clydesdales.

A DELEGATE: I understand that there is a Company formed in regard to insuring against bad weather. Any fair, I understand, can insure with this company. It is an insurance against wind and weather—they have a Dominion charter, and are now organized.

A DELEGATE: Can you name the company?

A DELEGATE: No, but I think their headquarters are at Woodstock.

The PRESIDENT: There are quite a number of these Insurance Companies. It would be better perhaps, to appoint a committee to enquire into this matter, or to authorize the Superintendent to send circulars to the Secretaries of the various societies throughout the Province and find out their opinions upon this subject.

J. LOCKIE WILSON: I simply wished to bring this insurance proposition before the convention. A number of societies had written about it, asking if something could be done. It is for you to decide what is best. I would suggest that you appoint a committee to look into the matter and report at the next annual convention. It is a big proposition, and well worthy of our serious consideration. These wind and weather companies might not be as safe as one organized by yourselves and fully under your own control. The committee that you place in charge of this question should endeavor to get the fullest possible information from every available source, so that the matter may be fully gone into at the next annual convention.

A DELEGATE: Mr. Wilson deserves a great deal of credit for the address which he has delivered here to-day, and he is entitled to the thanks of this meeting for the subjects that he has put before us. In regard to judges, I have been connected with fairs for the last eighteen years, and my experience has been that it is better to change the judges every year. Score cards in every department would be a good thing, not only for the judge, but for the exhibitors as well. At the Western Fair, London, of which I have been Chairman for the Dairy Department for some eight or nine years, I found it very difficult for years to get a genuine exhibit of butter or cheese, and after consulting with the cheese men and the butter men, I came to the conclusion that it would be wise to have three judges. The system of judging cheese and butter is for each of the three judges to fill up their score cards, they count up the total number of points, and in my experience of the last three years, when the fractions were added together there were not more than two points difference. We have got one of the best dairy shows in the Province of Ontario, and it is giving great satisfaction.

The PRESIDENT: Shall we discuss this matter of weather insurance any further? I think Mr. Wilson's suggestion was quite a good one. Is the mover of the amendment willing to withdraw?

Amendment withdrawn.

A. C. GRAHAM: In withdrawing the motion I propose that the President appoint a committee.

The PRESIDENT: Would it not be better to leave it in the hands of the Executive Committee, and next year a paper could be presented dealing with this subject and a more perfected scheme put forth than there is at the present time?

J. LOCKIE WILSON: I will prepare a list for the Executive, if that is satisfactory, giving a full statement of the gate receipts of the societies for the last three years, and then they will be able to make a comparison and look into the matter and present some proposition at the next meeting. I

have here a comparative statement of 360 fairs in the Province; you would have to submit it to the Executive and let them make a report on it.

The PRESIDENT: I am glad that the discussion on Mr. Wilson's address has ended the way it has. We cannot settle questions of that kind off-hand. No doubt the Executive will be able to submit some detailed scheme in reference to this matter of insurance. I tender to Mr. Wilson the thanks of the delegates for his very able address. The reports of the Eastern and Central Associations will now be presented.

J. LOCKIE WILSON: The President of the Eastern Association is not here; he has been very ill and not expected to live. I am sure we all sympathize most deeply with him in his serious illness.

REPORT OF PRESIDENT OF CENTRAL FAIRS ASSOCIATION.

BY DR. J. U. SIMMONS, FRANKFORD.

As President of the Central Fairs' Association I beg leave to report that last year was the most successful in the history of our Agricultural societies. The exhibits were of a high class, and the crowds attending our fairs all that could be desired. The circuits of fairs were arranged by us and proved satisfactory to the department. Our annual meeting was well attended, and greater interest than ever manifested in the work we have in hand. It is our custom to have two or three prominent speakers attend these meetings, and they are looked forward to with pleasure by all the members of our Association. We were unanimous in passing a resolution asking the Government to increase the grant to the Societies of this Province by $30,000, and we are of opinion that a portion of the finances of the Province of Ontario could be spent in no better way than in furthering and encouraging the educational work that we are engaged in. Every dollar spent in promoting the welfare of the farmer of this Province will be returned in future years one hundred fold, and we should see to it that the members of the Legislative Assembly representing agricultural constituencies should do their part in urging our servants the members of the Government to distribute a fair proportion of our moneys among the men who are making this the finest province in this great Dominion beyond the seas.

EVENING SESSION.

ADDRESS.

BY HON. J. S. DUFF, MINISTER OF AGRICULTURE, TORONTO.

I thank you very heartily for the kind invitation you have extended to me to be present at this important gathering, and also for the reception you have accorded me. I recognize the great importance of the work that the various associations are doing in this Province, because you are the representatives of the work that is being done from one end of the Province to the other in connection with our Fairs and Exhibitions. Since I have been called to assume the responsibilities of the position which I now hold, coming

Shorthorns.

in touch as I have with Agricultural Fairs in different parts of this Province, the great importance of your organization has been impressed upon me more strongly than ever before. From the fact that we have such a variety of climate and conditions, gatherings such as these should prove of lasting benefit through an exchange of ideas and intelligent discussion of the questions with which you deal. In Eastern Ontario the great proportion of the agricultural community adopt different lines altogether from what we do in Western Ontario. The same may be said of the Southern and Northern parts. Compare the Counties of Essex and Lambton with the Northern Counties of Simcoe, Grey and Bruce, and you find a number of lines upon which men specialize and reap the greatest possible fruits of their labor, which are considerably different from those in southern districts.

Another thought occurs to me, and that is that we are only beginning to realize the great importance of the possibilities this province holds as an agricultural centre. While our manufactures and other industrial lines are making wonderful strides, yet agriculture holds the most prominent place, and will always retain it. With the exercise of care and wisdom the agriculturists throughout this Province will hold their own against even the openings that there are on agricultural lines in our Provinces to the west. It seems to me that our climatic conditions are such as to make farming a success, both financially and socially, and there is no Province in the Dominion of Canada that will ever hold the splendid position that is destined for the people of Ontario if they are alive to their possibilities and avail themselves of the great opportunities that are before them.

I do not propose to make a speech. I am here through your courteous invitation to preside over this meeting. I am very glad, indeed, to see so many representatives present, and I sincerely trust that your convention in connection with your Fairs and Exhibitions will be of such a character that you will all go home not only pleased with the fact that you have met each other but that new ideas will be promulgated that will tend for the betterment of the various agricultural societies which you are here to represent.

Dr. J. O. Orr, the energetic manager of the Canadian National Exhibition, who was to have read a paper this evening on "The Management of Agricultural Societies," was unexpectedly called away, and wished me to express his regrets to the meeting that he was unable to be present.

SHOULD AN ENTRY FEE BE CHARGED ON EXHIBITS AT FAIRS?

By John E. Roxburgh, Norwood.

The question that has been assigned to me "Should an Entry fee be charged Exhibits at Fairs" is one that can give rise to a very great deal of discussion, and one that, judging from the dozen or more prize lists I have studied, is viewed from many different standponts.

To begin with, let us get at the basis of the whole system of exhibitions. Why are prizes offered? In answer to this you will say that they are offered to encourage the agriculturist to improve his methods of cultivating the soil, and to give more attention to the selecting and breeding of his stock, so that better results may be obtained. It is through recognizing the importance of results from this system that our government has set aside $70,000 annually, to be apportioned amongst our Agricultural Societies, and to make doubly certain that the money thus granted is expended solely for this pur-

pose they base the grant not on our total expenditure but on what we pay out solely for agricultural purposes. It is evident, therefore that the society which actually pays out the most money to the agriculturists is the society that is doing most for the object aimed at.

Granting then that this system of offering prizes for the purpose above mentioned is a good one, it follows that the more farmers we can get interested in these competitions the better will be the results, and to so much greater extent will we accomplish the end aimed at. Our system of agricultural societies to my mind, is very much like our school system. Just as we have our public schools with the various grades from part first to the entrance class, our high schools, collegiate institutes, colleges and universities, so we have our Agricultural Societies, and our larger central exhibitions. As it would be folly to start the child in the high school, so it would be to expect our farmers to start exhibiting at the larger fairs. We must first get them interested in our local shows, and by exhibiting at them for a few years they will gain a great deal of information which will be of much value to them. They may, then, after having acquired this knowledge and experience, enter the larger field of competition. There they do not need any inducement to exhibit; the advertisement itself is sufficient to call out our country's best. With our smaller shows it is different. Our farmers are backward about exhibiting, and usually it is only through interesting the boys that we can get them to come out and exhibit at all; but, once started they generally keep on and soon a marked improvement can be noticed in their methods of farming and in the selection and care of their stock: Owing to the difficulty in getting our farmers interested, I would strongly recommend that anything in the nature of an entry fee (in our small shows at least) be done away with. Our small exhibitions are doing a great work, and anything that tends to keep our farmers from becoming interested in them should at once be discontinued.

While I think this matter of charging an entry fee should be left in the hands of our Directors, still it gives rise to a great injustice, and one which our government should at once rectify. When a man pays his dollar and becomes a member of our society, that dollar entitles him to make entries in any or every section of every class in our prize list, and when he is awarded a prize the amount is paid him in full.

In many other societies the man must first become a member and then pay an entry fee for every animal or article entered. As a result that society is able to offer larger prizes, and is, apparently, paying more for agricultural purposes than it really is. To be explicit, let us take an example say in the poultry class. Here is a society which charges a fee of 25c. per entry, and offers prizes of 1st $1.00; 2nd, 50c.; 3rd, 25c. or a total of $1.75. Another society offers without an entry fee prizes of 1st, 45c.; 2nd, 35c.; 3rd, 20c. or a total of $1.00. Suppose now that every prize is awarded; the first society receives in entry fees 75c. and pays out $1.75 or actually aids the agriculturist to the extent of $1.00. The other society receives nothing in fees and pays out for agricultural purposes $1.00 or exactly the same as the first society. In other words each society is aiding the agriculturist to exactly the same extent. Now, according to the present method of distributing the government grant, the one society has its grant based on $1.75 and the other on $1.00, or the one receives a grant 75 per cent. larger than the the other, while each is actually doing the same work. It is evident, therefore, that a gross injustice is being done to a large number of societies, and I would recommend that this convention strongly urge upon the government

Ayrshires.

the necessity of looking into this matter and devising some method of rectifying the same.

W. Hickson: The imposing of an entry fee is a difficult question to handle. The point that seems to strike me most forcibly, is the injustice that has been done the societies that are not charging an entry fee, in the distribution of the government grant. Of course, it may be advanced that charging such fee keeps out some undesirable exhibits. We all know that in order to have a good Fair we must have a lot of good stuff there, and some claim that an entry fee will keep out a lot of inferior exhibits. On the other hand, might it not keep out a great many that are very desirable? For instance, take we will say, heavy draught horses, you may have forty entries in draught horses, and only about one-quarter get prizes. There will be perhaps six or eight or ten of these that are almost as good as the ones that won prizes, just a shade below them; that is a very desirable class to have at your exhibition. The charging of fees sometimes has a tendency to make a lot of empty stalls at our fairs, and you must all realize that in the case of a three or four days fair we must house animals in our buildings, the exhibitors use them, and we must get something out of that; we must charge a fee in order to be able to raise money.

Robt. Vance: Two years ago we charged an entry fee and some people said it was going to kill our fair; but it didn't. We tried it again last year; the fair was better, and we are quite satisfied that we can run it in that way. It is only fair that a man who is a large exhibitor should pay something for the privilege of exhibiting.

A Delegate: What fee do you charge?

R. Vance: $1 for a pair of horses, and then we run down to 25 cents on sheep and hogs and 50 cents on cattle.

D. Evans: I listened with a great deal of pleasure to the paper read by Mr. Roxburgh, on whether an entry fee should be charged, but I have come to the conclusion that it might be very good in theory, but poor in practice. How many societies are there in the province that don't take money from the community in which we reside? We take it from the people who come in at the gates, and who don't exhibit at all, in order to swell the amount of prizes. We are not all situated alike. One man may have a fine animal, and he pays a dollar for his entry fee, and he is permitted to make an exhibit. Another might want to make 150 entries, as some people do, and they have 150 opportunities to take from the prize list to the extent of their entries, while the other man makes only one. We put a tax on in order to swell the receipts, and also on our grand stand in order to help to swell them, and a tax on the privileges in order that we may be able to assist the agriculturists and give them the largest amount, so that the very best in the community will come out. We tried it last year and it was a success. I believe that the community in Strathroy is just as good a one as any in the Province of Ontario, but we have men there who, in order to avoid the 15 cents, enter a single rig in order to get on the grounds. Another person would have to pay 15 or 20 cents for his admittance. We adopted another system this year, and we received an entry of something like $1.25 each. I hope our directors will swell their prize list next year to that extent, in order to help the agricultural societies.

A Delegate: Did you pay as much in prize money before you collected the entry fee as you did afterwards?

D. Evans: We paid just as much in prize money before we collected the entry fee as we did when we collected it; there was no injustice done that way. We collected the entry fee in order to get money to pay the prizes.

W. Channon: This question does not apply to every particular agricultural society, and while one might be able to carry it out successfully along a particular line, another would benefit by carrying it out along another line. One would have an entry fee and the other wouldn't. It would be all right for those societies who don't furnish buildings to accommodate the people, but if you have to furnish a building, and then throw your gates open we wouldn't be able under our present conditions, to accommodate half the entries that would be made. I don't believe we should take any action in the matter.

J. Ellis: I might say that we charge a dollar and give them a free stable. If we didn't charge that, everybody would be wanting to get their horses in our stalls. The people must have accommodation. Since we have put up these stables we have found it very beneficial, financially and otherwise, and we pay more prize money out of it than we did twelve years ago.

A. Kerr: Don't you think the charging of these entry fees has a tendency to create a lot of empty stalls? I have known where it has worked out in this way, where a change was made in the system, and an entrance fee was charged, and the entries went down very materially. It is a good system to get along without these fees, or, possibly, a modification of the system might work out better. Now, in one Society in our section a man pays a dollar to become a member, and that entitles him to twenty entries free, and if he makes forty or fifty entries, then a small additional fee is charged that is working out in our section very satisfactorily. Mr. Roxburgh's paper was a very interesting one, but I consider that circumstances alter cases. It may work out with certain societies to their advantage, but not with others. There is another question of which we have not yet struck the key-note, and that is the distinction between professional and amateur exhibitors. All the Agricultural Societies in the Province should encourage amateur exhibitors, and I can quote from no less an authority than the Hon. Senator Beith in saying that his first success in the show line was made in the smaller shows which were held throughout the Province, and he kept going from minor successes to greater ones, and we also have it on the authority of Manager Wetherall, of Miss Wilks' Stock Farm, at Galt, that had it not been for the local shows held in the counties of Waterloo and Wellington they never would have exhibited at the Toronto Industrial or the great shows in Madison Square Gardens and Chicago. They all trace their success to the foundation laid by the Agricultural Societies in the two counties I have mentioned. The great question which comes up in the charging of entry fees is that of a professional exhibitor. He will send a large number of entries addressed to the Secretary of the Society to be taken care of. They are unpacked, shown and re-packed and sent up to some other show at a distance. That is the case with the professional exhibitor that goes out for the money that is in it. Now, the entry fees charged by the different societies are not nominal, that can be fairly seen from the expression of the delegates here, and it would not be possible to make a uniform system of fee throughout the province. A nominal entrance fee will work out for the paying of larger prizes by the Society, and also for the encouragement of the amateur exhibitor and to the discouragement of the professional.

Holsteins.

Geo. Raikes: We all know that the agricultural societies are kept up to a large extent by the people who attend them. We have to have some means by which they can get a reasonable percentage of the money which is expended in prizes. I remember years ago when we used to have a scale like this: A man paid one dollar and he was entitled to so many entries; if he paid two dollars, so many more; three dollars, so many more; and when it came to the limit of four dollars, he could enter as many as he liked. A man pays one dollar to become a member of the Society, and he enters what he likes. Our main object is to have as many exhibitors as possible. At the same time, I consider it is hardly fair that you should allow a man to come in and make fifty entries and pay nothing but his membership fee. It might be very well charged in case of a great many entries in the horse class. Any one who has been a director in the Horse Department knows that many farmers owning colts, do not know in which class to enter them; so they enter them in two or three. There should be a small entry fee to cover this for all animals. It would be well, for the reasons I have mentioned, to charge for the horse department especially.

R. J. Watson: I am not in favor of charging fees. Societies doing this are taking money that really does not belong to them, because they get credit for giving a certain amount of prize money that they really don't pay, because this fee is kept back. In our fair we charge a dollar, and we try to encourage people to show as much as they can. We try to fill our whole show grounds, and make it interesting in order to draw the people there, and we give them as much for their money as we possibly can.

The Chairman: We should thank Mr. Roxburgh for the interesting way in which he has handled this question. There have been some ideas brought out in this discussion that are altogether new to us, and we are glad to have had an opportunity of listening to it. I desire to thank Mr. Roxburgh on behalf of the Convention for his very interesting and instructive address.

JUDGES, AND IDEALS IN JUDGING.

By Prof. G. E. Day, O.A.C. Guelph.

It is a little difficult to handle a subject of this kind before a meeting which is probably made up largely of directors of fairs and fair managers, and it seems to me that it is perhaps a little more adapted to those who are engaged more actively in judging. In looking around this room, I see a number of faces that are quite familiar to me as judges of live stock, and my remarks to a large extent will apply to them, and others to members of fair boards.

A judge should have many qualifications, but three are particularly important. Perhaps the first, is a thorough knowledge of the breed or the class of stock which he is called upon to judge. If it is pure-bred he should be familiar with the particular breed, and with the types of that breed which find favor with the breeder; or if it is market stock of some kind or other, then he should be familiar with the requirements of this class, and his judgment should accord with the requirements either of the breeders or of the market. Another important requirement is that of absolute honesty. In that connection, I do not believe that there is one-half, nor one-quarter,

nor even one-tenth of the dishonesty among judges that many people believe there is. The judge must judge the animals. He is not supposed to judge the owner, the exhibitor or the breeder,—but the animals. When a man goes into the ring and expects first prize, there are always some onlookers, who are, perhaps, interested in some exhibitor, and they say that that particular judge was biased in giving it to so-and-so, and that nobody else could get a look-in. Now, the chances are that that judge is doing the only honest thing he can do, and if he did anything else, if he attempted to divide, he would really be dishonest. And further than that, we must remember that a great deal of the criticism of the judge comes from those seated around the outside of the ring, and there is, of course, no responsibilty resting upon them, and they are very free to talk; and you will hear different theories and all sorts of criticisms of the work of the unfortunate judge in the show ring. Many of those who are, perhaps, the most bitter critics forget that they themselves are strongly warped in their judgment in the very thing they are accusing the judge of, and the chances are in ninety-nine cases out of a hundred that their judgment is much more seriously twisted than that of the judge. They can say what they like; they have no responsibility resting upon them. The judge is put in there and all eyes are upon him, and often if he wished to do wrong he dare not do it. He may make mistakes—any man can do that—but he dare not do anything that is glaringly wrong, or else public opinion will undoubtedly rise up and condemn the man. I say there a good deal of unjust criticism of the judges sent out through this country. Perhaps I can speak feelingly upon that myself.

Then, there is another qualification that seems to be very necessary to a judge, and that is *tact*. There are many excellent judges who lack tact, and there are other judges whose greatest qualification is tact, and they can get out of some rather awkward places by virtue of this characteristic. Now, the judge should always remember that the exhibitor is deserving of a great deal of sympathy and consideration. It is the exhibitor who has taken all the pains, spent all the time and labor in connection with these animals, and has got them ready for show, and has brought them out to the fair with the firm belief that he is a sure winner, and when the animal is set back to the second, third, or fourth place, as the case may be, that man is necessarily and naturally disappointed; and if he is inclined to be a little gingery, he will lose his temper and say things. Then there is trouble; an enemy is made, perhaps, for life. The Judge must remember that that man has had a very severe disappointment, and that a great deal of allowance must be made for anything he says under those conditions. If we would look with a little more charity upon the feelings of exhibitors when they meet with a reverse of that kind, it will really be better for all concerned. If a man goes at you hammer and tongs, becomes abusive and so on, then you have got to get out of it the best way you can. I am firmly convinced that there is a way to handle most reasonable men, and if you can manage to have a chat with them on the quiet, very frequently things can be explained. But it is a very bad plan for a judge to go at a man's animal unmercifully, or at the man himself. A judge must always have a great deal of sympathy with the exhibitors, must have their interest, of course, at heart, and feel sorry for the man. I know how I feel myself when I hand out a man a second or third prize ribbon when I know he has fully expected a first. It is the hardest thing for a judge to do. I would like to give them all first, so far as that is concerned, and make them all happy. A man is going to be disappointed under those circumstances, and

you cannot blame him for feeling a little sore at the time. I make a great deal of allowance for him, and any judge should. In these days, when judges are being called upon to give reasons—that is a growing practice, by the way—it requires a man with a great deal of tact to give reasons that will be satisfactory to all exhibitors. He has got to be pretty careful, or he is going to hurt some man's feelings unnecessarily. He must be careful and use great tact in pointing out the defects in any animal before people, because if he does so these people go away and this criticism may be pretty much exaggerated before the retailers of that get through with it. Therefore, the judge has always to be very careful what he says when he is judging, because while what he says may be absolutely corect, at the same time when it has gone through half a dozen mouths afterwards it may be very incorrect, and it may prove very injurious to the person who exhibited the animal. As there are a large number of judges present, I will make a suggestion along that line, viz: when a man is asked to give reasons, he should have the courage to give an exhibitor every possible credit and encouragement, and when he comes to state the reasons why he made his award as he did, he will give his reasons rather why he put such an animal first, than express the reasons why he put the other animal second. That is, that the first prize animal is stronger here and extra good there, and so on, and dwell upon its merits; and when he comes to the second prize one, if it is a kind of animal of which he can speak honestly, he can give the man credit for having a good one, and can compare him with the one below him, and say he is better upon such and such points. If a judge does that I think it will be more satisfactory all round. When we have to give reasons, the judge must be very careful not to unnecessarily ruffle up the exhibitors' feelings or hurt them. I have seen a judge when he has been just a little doubtful in his own mind and somebody gets criticizing him for his decision, become a little angry and attack this other man's animal. That is a mistake. Never dwell upon the defects of an exhibitor's stock; try to give him a helping hand rather than discourage him by being unnecessarily severe.

I would like to say a word or two regarding some of the problems which judges have to face, because they are many, and I will not have time to touch upon them all. There are a few, however, to which I would like to call attention. I said that a judge should have a knowledge of the type of the breed. That word "type" is a very elusive term; it is pretty hard to define. Take the average man and pin him right down and get him to tell you what he means by type. One will say class; another says these two animals are of the same type. "Why are they?" you say. "Because they are both short-legged, low-set animals." So far as that is concerned they are of the same type. Another man will call type something else; it is a little hard to get it closely defined. Still, there is, after all, something about an animal that tends to fix its type, and, in judging, we always like to get animals arranged according to the type which they represent, but I would like to throw out this suggestion. Sometimes we become slaves of type—it governs us instead of our governing it. In other words we are probably induced or tempted to put an animal up say, to second place. We put a certain animal into first place, there is no doubt about that; here is another of similar type, and we feel tempted to put it in second place so far as type is concerned; and here is another that varies considerably from the first one, but it is immeasurably a superior animal in many respects. The judge feels that it is a much better animal, and yet it varies from type. In a case of that kind a judge should not hesitate to break

Good types.

type at all, because if it is going to cause us to place an inferior animal above one that is superior, then, I say, the sooner we break type, the better. It is a commendable thing to have our animals arranged according to type, so far as possible, but I have frequently seen severe criticism in the press of judges who have broken type in the ring, and I would say that the person who makes this criticism should be absolutely sure that he is right—absolutely certain that he is a better judge than the man who is in the ring. I sometimes think that some of the members of the press should be out on the Judging Board. I have got raked over the coals a number of times pretty severely; I speak from personal experience there. However, possibly, I deserve as much of the raking over as anybody else, so far as that is concerned, and I can stand it just as well as anybody else.

Now, there is another difficulty that a judge encounters, and that is when he comes to size up his animals he finds that one excels in some particular point, but it has some defects; no animal is perfect. Another one is a little weak where the first was strong, and it is strong in some other points where the other was a little more defective, and so on. Now, if animals all varied just in some points, then it would be simply a matter of sizing them up, but when you get one that is strong in one place and weak in another, and another that is strong in some other respect and weak in some other place, may be two or three other places, then it becomes a question of degree, and of balancing; in other words it is a question of the judge exercising his judgment, and that is where the difficulty comes in. That is what causes the judge all his troubles, to know how to balance these things one against the other. I will give you an illustration of what I mean: At our last Short Course I had brought in four Shorthorn cows, and we had a number of very good Shorthorn men there, and very good judges. I had a purpose in picking out these four cows, and we had them place them. We got as many as possible to place these, and there was not one of the four but received a vote for first place; every cow had her champion for first prize, and then, they wanted me to place them. All I could do was to be honest and say: "I don't know how they should be placed." I actually did not know. Now, I think the more a person studies this question of judging of live stock the less cocksure he will be regarding his own judgment; that is to say, the more he will feel that there may be room for somebody else to differ from him. A judge does not lose anything by being practical on a question of that kind, and in the event of any disagreement or dissatisfaction concerning your decision then you are in a position to argue on the points of merit upon which you have based your award and decision. Take two or three of your very best breeders, and put them into a bunch of cattle, sheep, swine or horses, and you will find a great many differences of opinion expressed. When you find animals placed in a certain way, it does not necessarily follow that any judge has been dishonest. So long as we have intelligent men doing our judging, there will be differences of opinion. A good many people think that this judging should be done by some sort of a mathematical calculation, by taking the exact measurement of an animal and so on. That is nonsense. Every intelligent man who knows anything about judging knows that that is common sense, and yet there are some people who think that we pretend to do that in our work in the college. We do use score cards there, but still that is simply a means of teaching and not judging—a means towards an end. It makes a young fellow a little more systematic in his examination of an animal, and that is all. So long as we have intelligent live stock judges, so long will there be differences of opinion, and properly so. I do

not mean to say that the question of live stock judging is a lottery—not at all; I am speaking of cases where it is extremely close. Take five or six judges in one class of stock and send them into a whole bunch of animals, and ask each man to make a selection of three or four of the best of them, and I will guarantee there won't be a great deal of difference in the selection of the three or four best. If there was any marked difference between animals, you would find a marked uniformity in the placing of the awards. I have seen several cases myself in the show ring where I was absolutely undecided which way to place the ribbon; one would be good in one place and another in another, and it was awfully hard to know just where to balance. If that animal went to another show and came off first, I would be glad of it; I would not find fault with the other judge. We have got to look at these things reasonably, and if we do that we will see that there is reason in many of the changes that are made. There is cause for congratulations in many cases, rather than for the adverse criticisms that we hear heaped upon the judges. Though there is room for difference of opinion in very many cases, at the same time any man who wishes to be a judge of live stock should spend every effort in learning all we can about the class of stock he is supposed to be a judge of, and by comparing notes with other judges, by seeing other men work and getting their reasons, exchanging ideas with others, he will find that as the time goes on he will become very liberal in his views. He will probably be inclined to change his mind a little concerning the views which he held previously, concerning things which he considered of great importance. If we rub up against other men a little more than we do, we would be inclined to change our ideas a little. There is great need for judges above all men, to rub up against their fellows in order to broaden out, study every phase of this subject, and become in other words, students of the business in which you are engaged. I thank you for the kind and attentive hearing you have accorded me.

T. Dickson: Two years ago, notwithstanding the fact that I am an old man, I took the Short Course at Guelph, and I reccommend all farmers and farmer's sons to do likewise. I enjoyed the course very much. It costs but a very small sum of money, and you merely have to pay your own board. Prof. Day is one of the instructors there, and he certainly is a very able one on live stock.

The Chairman: I feel sure that I voice the sentiments of every one present when I convey to Professor Day your very hearty thanks for the splendid address which he has given us this evening. The subjects dealt with by him were very interesting and instructive. I therefore, take pleasure in conveying to Prof. Day the thanks of this Convention for the excellent manner in which he has addressed us.

THE DISTRIBUTION OF THE GOVERNMENT GRANT.

By Dr. Wm. McGuire, Waterford.

I am not going to take up very much time this evening. The question I have before me was taken up pretty fully last year by Mr. Boughner, and I am sorry he is not here to-night. The title of my subject on the programme is: "Is the Present Method of Distributing the Government Grant Satisfactory, and should it be increased?" If I were to answer that I would

Close Competition in the Judging Ring.

answer in the affirmative. Now, in what way would you use the increased grant? Some portion of it, if not all, should be used by giving a grant to every Society the owns its own grounds and buildings. Mr. Boughner showed you last year that we were getting $70,000 from the Government, and that 95 per cent. of that was given to the exhibitions throughout the Province. Now, a society that is giving, we will say, $800 in prize money gets an equal grant with another society giving a similar amount, and the one owns their own property and the other owns not a dollar's worth. Take, for instance, the Norfolk County Society in the town of Simcoe, which has some $16,000 invested in buildings and property. The interest on that at five per cent.—$800 a year—is larger that the average township fair gives for its entire prize list. They do not get one cent from the Government grant on that large investment. Take our own Fair in the Township of Townsend, one of the banner townships in the Province. We own property there worth $2,000. Take the township right west of us, they don't own a dollar's worth of property but they get a grant the same as we do. What constitutes a good fair? Good membership, a good prize list, and good accommodation for the people themselves, and for the cattle and horses membership; you all know what it should consist of. In one fair you have a successful Fair. I am not going to enter into a discussion concerning membership; you al know what it should consist of. In one fair you have a membership of 150 and in another of 500. Surrounding conditions go to give them that, and probably the Fair with 150 members is doing better work than that with 700 or 800 members. We must see that our money is spent so as to encourage the farmers in our immediate neighbourhood. Do not allow your grant and your money to be given to professional exhibitors, who go through the country from one place to another and make a business of it. The ordinary farmer cannot compete with such men. He hasn't got one chance in ten, because the latter work the year round to prepare their stuff for the Fair. Unless you make a distinction, the ordinary farmer has not got a chance to make anything out of it; therefore, he gets discouraged and does not go near your fair. We have tried to get over it by making two classes, one for professionals and one for amateurs. In that way we allow the farmers to compete among themselves, and while the farmer may compete in the professional class the other cannot compete with him. You must increase your prizes if you want to do that, and this necessitates a large attendance, and you must have a large grant, or some way of getting the money. It has turned out in this way, that a great many Fairs in order to keep up their prize list have resorted to means of making money that is not a credit to the Agricultural Societies throughout the country. They have adopted horse racing and things of that sort in order to make up the money that we can put on the prize list to have competition of the professional and amateur. Now, if we had a substantial Government grant over and above what is given at the present time to be distributed among these Fairs which own their own buildings and property, it would help a great many of them to put their grounds in better condition. Some still go to work and put up a large building and buy some ground and mortgage it for all it is worth. They have got to pay the interest on the mortgage, and if the money that comes from the Government helps them to pay interest, they can use their money for the prize list, and in that way you are helping the society. They have their money invested, and they have a right to interest upon it. You say "Why should the Government give a grant, or help these societies to own their own buildings and grounds?" For this reason, if for no other, that the Govern-

ment practically owns the grounds and buildings. Supposing our Society which owns $2,000 worth of property and has no debts, dies out, where does that property go? It reverts to the government, of course. If you look at the value of the property in the hands of the Societies throughout the Province we have over half a million dollars worth. That is an asset for the Government, and it is nothing but fair that they should give a grant towards keeping up their own property. If we could get on our $2,000 investment, say, five per cent. that would keep our fences in repair. We should have an increase in the grant. The extra grant I speak of will be purely and simply for the Society that owns property and to encourage others to acquire property and buildings, so that they can entertain their people and house their horses and cattle. There were 360 societies sharing in the Legislative Grant in 1907. From a return received from the Superintendent, I find that 127 of these have nothing invested in grounds and buildings, or have reported nothing, leaving 233 with investments ranging from $10,000 to $19,000, with an aggregate of about one half a million dollars. Of these, 47 societies report less than $500; 50 from $500 to $1,000; 54 from $1,000 to $2,000; 49 from $2,000 to $4,000; 25 from $4,000 to $10,000; and 8 above $10,000. We get a grant of $70,000, and if they were to increase it to $100,000, it would allow the government to give a grant of five per cent. on the money invested, which would materially help those societies that have got their money invested in property. This extra $30,000 is no more than the farmers of the Province of Ontario are entitled to. I simply want to point out that we should have an extra grant. The grant that is given now, I believe, is well expended, and the extra grant should go towards helping societies to improve their property and to assist those who have none to procure it, because they know when they invest their money that they will have something to help them to pay the interest on the investment, and, therefore, they can go in and increase it little by little year by year until they have something that will be a credit to them. When driving through the country, you see a society whose grounds contain fine buildings which are creditable to them; and the same thought occurs to you when you see a farm with good barns and buildings, and apparently well taken care of. When you see a nicely lettered board across a farmer's gate, with the name of his farm painted on it, together with his own, people comment on it favorably. That creates a spirit of emulation. The same thing holds good with our Agricultural Societies. It is an educational institution the same as our Public or High Schools. Our Government supports our farmers' interests in the winter, and has a man travelling through the country at the expense of the government, giving lectures, for what purpose? It is theory they are giving and they are expecting the farmers to put that theory into practice. It is for the farmer to do so. Each farmer throughout the neighbourhood will take it into serious consideration and bring the result to the Fall Fairs and put it beside that of his neighbour and they have a chance of comparing results. The Farmers' Institute is a Court of Theory and the Agricultural Society is a Court of Practice, and the two of them should work together; one is comparatively useless without the other. The Government should increase the grant to $100,000, and put the increased grant to the benefit of the Societies owing their own property.

Thos. Dickson: I represent a small society, and this is the first time I have had the pleasure of coming down to these meetings. The eloquent addresses which have been delivered here should be an inspiration to the farmers of Ontario. No doubt, all of us will carry home some new ideas to be

put into actual practice during this present year. I don't intend to oppose the proposition; no doubt everyone here feels that the grant should be increased, if it is possible. But to say that you should give an increased grant to strong and powerful societies who have spent a lot of money seems to me unfair. You must remember that some of the small societies are doing just as good work in proportion to their size as the large ones.

A DELEGATE: It would be possible to make an improvement along one line, at least. You have to-day about $70,000 of a grant. There is nothing to prevent your Secretary or Treasurer putting in a padded return. It would be advisable to have some check upon this distribution, and have an auditor appointed by the Province to audit the accounts of the different Treasurers annually. The Provincial Municipal Auditor is not able to do that; he cannot cover the ground any more than once in three or four years. If you increase this grant to $100,000 and there seems to be a strong feeling

Good type of Steer.

that it should be done—in my opinion it would be advisable to appoint such an official, even if he cost two or three thousand dollars. It would only be two or three per cent. of the total expenditure, and you could feel sure that no society is getting more than its share. To-day one society is getting a little more than it is entitled to by means of its manipulation. You would be quite within your province, Mr. Chairman, in appointing an Auditor to do this work. I will, therefore, move: "That this Convention is of the opinion that there should be one appointed." I don't know for a positive fact, but I think there are Societies in this Province that are obtaining more money than others that are giving more in prizes. You can term it or call it what you like, such a thing is in existence to-day. I don't say that it is widespread, perhaps it is not sufficiently widespread to justify the appointment of a special auditor, still, it would be satisfactory to the Agricultural Societies of this Province to feel that there was no monkey work being done. Such an official would not cost a very large amount, and I consider the expenditure in this respect would be fully justified.

J. Lockie Wilson: I think, perhaps, it would be well for the last speaker to make some explanation, so that there may be no misunderstanding. From reports I receive from different Societies throughout the Province, I understand the directors sit around their board and pass their official statement, that statement is audited by two supposedly honest men, selected by the directors. We believe that the majority of the farmers that sit around the boards are honest men—I believe they are. The President, Secretary and Treasurer also attach their signatures. On top of all these endorsations, the Treasurer is obliged to take a solemn affidavit before a Justice of the Peace, as to the correctness of the Society's Expenditure, and is liable to heavy penalties and imprisonment if he is guilty of perjury. On receipt of these returns by the Department they are carefully scanned by an official and compared with the prize list issued by the Society. These precautions, I think, are sufficient guarantee that the interests of all are carefully guarded.

Aberdeen Angus.

H. J. Gould: While congratulating Dr. McGuire on his address I cannot quite agree with everything that he has said. In our town some years ago we felt the need of good buildings, but our Association was not strong enough to build them. A number of energetic farmers and business men in our town formed themselves into what they called a Driving Park Association, put up a three or four thousand dollar building and built a splendid track in the park. They could not keep it up, however, and after struggling along for a number of years, they sold it for half of what it originally cost. Are we not doing just as much good for the agricultural interest in the community in which we live as if we owned the buildings for them. A number of farmers and business men have put up the money, and the buildings are there for the use of the community. We are having a splendid fair and I don't think it is right because one Association has got, say, $15,000 work of property that they should get any more money than a

society who possesses property in a less amount. The grant, together with the proposed increase should be divided among all the societies, as it is now based on their expenditure for agricultural purposes.

Wm. Hickson: Up to 1906, the grant was based on the membership of the Societies. In 1905 we discussed this question at length, and the consensus of opinion was that it should be based on the expenditure for purely agricultural purposes. I have no objection to getting an increased grant. What we are getting now is hardly commensurate with the importance of agriculture. We are not getting our share. At the same time the whole of the grant should be given for purely agricultural purposes as is now done. It is no doubt a good thing to have good buildings, fences and grounds and all that. We have a very nice park, and all the picnicers use it free of charge. We are glad to have them, and we have very nice plants placed along the sides and trees. Once you commence to apportion the grant on grounds and buildings, who is going to value these? I know of one society who got in a new set of directors, and they went to work and got big grounds, constructed a race course, and went in for horse racing and, of course, put up a big fence and so on. That Society is dead. Once we begin to give money for building or grounds we are putting a premium upon that kind of thing. I notice on the superintendent's report to-day that the exhibits of 1908 were the best on record by 40 per cent. Well, now, I attribute that largely to the fact that our Government grant is based purely upon agricultural purposes. That is the very thing that makes our societies do good work in agriculture.

D. Evans: I believe that it should be the duty of every Society to send a prize list to the Superintendent of Fairs. That would be a step in the right direction. In regard to the money that it is proposed we should ask the Government for $30,000. It should be granted to the Societies so that they will have proper buil lings in which to make an effective display, and unless we have these, we cannot be successful.

J. Thos. Murphy: Every Society in the Province should send its prize list to the Superintendent for his guidance, to show whether the proper sum was rendered him for agricultural purposes; that was done by our Society.

J. Lockie Wilson: I send out to the Secretaries in this Province a request for their prize lists, and the ruling of the Department is that in future no Society will receive its grant until this is done.

A. C. Graham: It seems to me that there is a strong tendency for the money distributed among agricultural societies to go to the centres where the people are well-to-do, where every-body is fairly well able to take care of himself. All parts of the Province of Ontario are not similarly situated, and there is a point which has been very much overlooked by the speakers on this question—that is the Agricultural Fairs in sparsely settled communities. Take the northern sections of Victoria, Peterboro and Hastings, where it has been difficult for people to keep their families together and educate them so that they will work and develop the farms properly. In these districts the Fairs have in many instances ceased to exist. In North Victoria, the Norland and Coboconk Societies have been forced out of business during the last year. We are not here asking for anything but justice, and I am as anxious as anybody else that the grant should be increased by $30,000, but the sparsely settled communities, where it is difficult to hold Fairs, should not be overlooked. The Counties of Hastings, Peterboro, and Victoria

have a stretch of northern townships far away from the towns and cities, and it is difficult for these people to have Fairs. I am pleased to have the opportunity of presenting this fact before the Hon. Mr. Duff, and would ask that these districts should be taken into consideration and be placed on the same footing as the unorganized districts of New Ontario. You could have one rich township that would be worth perhaps as much as three or four others, and it would not be fair to give all the grant to this one rich township and leave the area of these poorer Fairs and townships with a poor Fair altogether out in the cold. I appeal to the just sentiments of anyone here. Is it fair to do that ? Is it fair that one township should get as much as three or four townships, because it happens to be well off and well-to-do? The rich are always able to take care of themselves.

THE CHAIRMAN: Do I understand you wish to move a resolution in relation to the paper that has just been read?

Shropshires.

WM. HICKSON: I move that this Association request the Minister of Agriculture to give as much special assistance as he deems within his reach to the Societies in the back townships; twenty miles or more from a city or town and adjacent to the districts of Muskoka or Haliburton, namely, the Northern part of Victoria, Peterboro and Hastings."

The CHAIRMAN: I am inclined to think that resolution is scarcely in order for this reason; you only deal with some three particular localities, the northern parts of Hastings, Peterboro' and Victoria. A move of that sort, if it was contemplated by the Government at all, would have to be from the standpoint of all the poorer and weaker societies in the Province. You must also bear this in mind that these are not the only sections of Ontario in which you have like conditions, and you have to take that into consideration. It seems to me that a move like that contemplated, the proper way to do is for the gentlemen who are interested in the matter to wait upon the Government and discuss this question; and while I am not going to say what will be done, at all events they will be prepared to listen to what you have to say.

THOS. NICHOL: Ours is a small Society, and I am sent here to oppose this grant to the Societies that own their own buildings. We own our

own building, it is one that is not worth $16,000, but we own it, and it is paid for and we have a little money in the treasury, too. Our directors oppose this on the ground that the larger societies would gobble up the larger proportion of the grant, and the smaller ones would be practically left out in cold. We are, however, unanimously in favor of the increased grant, but it should be divided according to expenditure for agricultural purposes as laid down in the Act.

WM. CHANNON: I maintain that the distribution of the grant at present apportioned is equitable. We represent a very great institution, and we get $70,000 of a grant to be divided among these Agricultural institutions through-out the Province. Now take the University of Toronto, for instance, where in one single year they get a Government grant of over $300,000. It is all right if they can get that and do good with it, but if they can do that with one particular institution, why cannot they give more than $70,000 to all the Agricultural Societies which are also educational in their work and are of larger financial benefit than all the colleges in the Province? We should go before the Government and lay our case before them, knowing that it will be fairly considered. We must make up our minds what we want, and then go and ask for it and keep on asking for it.

R. H. LEARY: How would it be for this delegation to wait upon the Government to-morrow and ask them to increase this grant to $100,000, that money to be divided in proportion to the amount of money paid for agricultural purposes, as provided by the Act. I move that motion.

The resolution was adopted.

The thanks of the convention were then conveyed to the Hon. J. S. Duff, for the very able manner in which he has presided over our deliberations this evening.

MORNING SESSION, SECOND DAY.

ELECTION OF OFFICERS.

The election of officers then took place, and resulted as given on page 6.

AUDITOR'S REPORT.

Messrs. Hudspeth and Collins, Auditors for the Association, reported that the Treasurer's books were properly kept, and showed a balance on hand at the beginning of the year of $109.16. The report was adopted.

PLOWING MATCHES.

By J. W. SANGSTER, TORONTO.

I am placed somewhat at a disadvantage when called upon to take up this important question. The arrangement was that I should lead the discussion upon Mr. Wheaton's address entitled, "Should Plowing Matches be Revived and Encouraged." The question is a very important one. In agriculture, the present is a time of intensification as well as of expansion. There is a persistent effort to increase the capacity of the acre of land, as well as to increase the acreage. The whole trend of the movement, however, is towards the intensive. "Not large farms, but farms better tilled."

You have many times heard the remark that the plowing match has had its day, that it is an old-fashioned institution, and its place in modern agriculture has been lost. The still more pernicious remark has grown out of it, to some extent at least, that good plowing is not so important now as it once was, and it has been said, and believed, too, often. A moment's reflection shows the fallacy of all this. There is nothing which is worth doing at all which is not worth doing well, and plowing—the basic operation of all cultivation—is worth doing well. It is true that it has been argued, and by some good farmers, at times, that we could get along with less plowing, but these men would not like to be quoted as saying that when done it need not be done well. It is also, perhaps, true that the old-fashioned style of setting up a nice toppy comb on a furrow of sod is a practice rightly abandoned long ago, but the fact that fancy plowing was not found to be

Southdowns.

practically advantageous is not necessarily followed by a supposition that good plowing should not be encouraged more than ever. The reason why Italian farmers are able to pay so much annual rental for their lands as would constitute a purchase price for it here, Prof. Creelman found in the fact that they were compelled to dig it with a spade, and thus knew every square foot of the ground and what was needed. This should be proof positive that the basic operation of cultivation—plowing—should be performed well. Take the case of the farmers amongst you who are plowmen. What kind of farmers are they; do they plow well, and then do the rest of their work in a slipshod manner? You will agree that they do not. If the field is well plowed it is usually well cultivated and well drilled. The root crop will display straight even lines, and the man who has made them so well will not be satisfied with a dwindling or patchy appearance to the finish

when the crop is growing. In more ways than one or two does good farming mean good plowing, and good farming means success, even when associated with only moderate commercial ability. There are few things of a beneficent nature so contagious as good plowing. Where the sentiment is once introduced, it readily takes hold upon the fancy of the youth of the farm. Where one man in the neighborhood plows well there is apt to be a good deal of emulation, and many an attempt will be made to imitate his work. Speaking of this matter recently, Dr. Rutherford, Dominion Live Stock Commissioner, stated that many years ago a couple of Scotchmen settled on the famous old Portage Plains of Manitoba, and at first people derided their mathematically correct furrows across the black Manitoba soil. After a time the matter was regarded differently, and in ten years' time for a radius of ten miles could be seen improvement in the plowing and other

The foundation of his herd.

cultural operations most marked, and that particular portion of the plains is to-day noted above the others for the absence of weeds and poor harvests. There are possibilities little thought of in the good old plowing match. It is plainly to be seen that the farmer of to-day is striving as he never did before for advancement agriculturally, as well as culturally. He is watching for improvements in method and system, for the advent of the newer and better, just as energetically as his predecessor abused and derided all such innovations. The farmer learns most readily from ocular demonstrations. The plowing match teaches him with more ease and simplicity than lecture or discussion ever can. Granted a fine autumn day, a field of nice sod and one of stubble, a good-sized group of candidates for honors and money prizes, with classes for the various agricultural implements—not plows alone, but harrows and cultivators—no classes of long

duration, but from one and a half to two hours, and with, as the primary object, not the winning of the first prize in the sod field, but the best seed bed prepared with the least expenditure of labor, meaning the most effective use of the best implements for the purpose, and there is a great deal of knowledge to be gained from the day's work for everybody interested. Add to this, if possible, the presence of an expert agriculturist to explain the best methods of treating each variety of soil in the locality, to talk on agricultural operations of all kinds, and generally make the event educative to spectators, could a day be spent to better advantage by farmers in any locality in this old Ontario of ours? The past few years have seen great advancement in many things—farmers have been busy learning about the dairy industry and the best methods of feeding, care, and management of cows and their milk, and the best method of caring for live stock generally. Much that is new and profitable has been studied with good effect. But, meanwhile, the loss of the plowing match has been slowly, but in many cases too surely, getting in its work, until now the results are too disgracefully apparent in many localities. Stubble fields plowed up this fall show furrows as devious in their direction as the steps of the Wandering Jew, their character also variegated by a fantastic irregularity of depths, with an inclination toward the shallow; for has not the young man been taught that plowing is not of so much account any way? Better plowing means better crops. All that can be learned of dairying, of cattle-feeding, or of horse breeding, means the turning of the products of the farm into money to better advantage. Many of you are business men in the towns and villages of Ontario. I would like to enlist your sympathy in this movement for the establishment once more in your locality of the old-time plowing match, modernized to apply to modern agricultural methods, and to teach its underlying principles. How often have you voted, subscribed and donated money in response to some seductive tale, artfully concocted, asking for a bonus to some new industry in your town? How often has your patriotism, your loyalty to the old town you live in and believe in, prevailed, and you have committed yourself and your town to the enterprise. Sometimes it has been a success, sometimes, not. There is one plan which calls for a little assistance and co-operation to make it a success, and which will not fail to add to your town and your locality a much larger share of prosperity than you at first think. If there is one lesson which tradesmen have learned well it is the fact that one good customer is worth at least six bad ones. The encouragement of improvement in agricultural methods in your locality will make for added prosperity among the farmers tributary to your town, and will mean for you an increased volume of trade—not intermittently, but steadily and surely, and a thing to be relied upon as each year passes. It will be as hard on the farmer who is poor pay as warm rain is upon small potatoes. There is no other work which you have done *pro bono publico* which has paid you so well as that you have spent upon the local Fall Fair. There are two branches which might well be added to that institution: The Field Crop Competition and the Fall Plowing Match. They are two sister enterprises, two children which each society would do well to adopt; and the society which adopts them will flourish.

The PRESIDENT: Mr. Sangster has covered this subject very well, and he should have the thanks of this convention for the very able address which he has delivered to us.

SHOULD THE PLOWING MATCH BE REVIVED?

By J. W. Wheaton, Toronto.

The subject assigned to me is not a new one. Plowing matches were a feature of Ontario agriculture many years ago. In some districts no event arouses more local interest to-day than the Annual Plowing Match. To the Agricultural Society is, perhaps, due the credit for first introducing it. Those held under the auspices of agricultural societies were a feature in our development and progress half a century ago. They accomplished a definite purpose, that of encouraging the young men on the farm to be better plowmen and better cultivators of the soil. They helped the older men also, and in many ways created a healthy rivalry in the locality in which they were held. They stimulated farmers to do better work, to be more accurate and thorough in preparing the soil for the coming crop and in the management of their farms generally.

With the few exceptions we have mentioned, where local interest and enterprise have kept it alive, the glory of the old-time plowing match has departed. The rivalry among farmers and farmer's sons to win honor and glory as the best plowman in the district is a thing of the past. With this incentive to better work removed, plowing methods have deteriorated. The chief ambition to-day is to turn the soil over as quickly as possible, no matter how, so long as the black earth is on top. Careless plowing has brought with it careless methods in soil cultivation, resulting in a development of weed growth that lessens very materially the return in crop production from the average farm.

But the question which concerns this gathering at the present time is not so much the value of good plowing and good soil cultivation, as the adoption of some scheme that will stimulate better work in this direction and at the same time make agricultural societies stronger factors in promoting the agriculture of their respective districts. A revival and encouragement of the plowing match would enable them to do this. A number of reasons could be given showing that it would be wisdom on the part of Agricultural societies to take up this work. Among them may be mentioned the following:

(1) The plow in use to-day is built on the same principle as that which our fore-fathers used fifty or one hundred years ago. The improvements that have been made have been more in the direction of securing greater speed in turning over the soil rather than in any change in the principle of plow construction. This is not saying that the modern plow is not an improvement on its predecessors, but the fact remains, that the principle of the plow is the same. Good plowing, therefore, depends more upon the skill of the plowman than upon the instrument that he works with. To effect an improvement in plowing, which is at the basis of soil cultivation, the plowman must be trained. The plowing match is one of the means of doing this and of showing what good plowing is and what it will do in improving soil cultivation.

(2) That there is a need for better plowing and better soil cultivation will be readily admitted. The thing to do is to bring home to the farmer how improvement can be made. This the plowing match will do, if properly managed.

At the Ploughing Match.

(3) The plowing match will create a spirit of healthy rivalry in the district that will make for better plowing and better farming.

(4) In bringing the farmers together the plowing match will afford an opportunity for the discussion of various topics pertaining to the agriculture of the district, the kinds of plows to use, etc., and at the same time encourage social intercourse, which is always helpful to any community.

(5) The plowing match will further strengthen the hold the agricultural society has upon the people of the district. The more avenues a society has for reaching them and claiming their support, the stronger will its position in the locality be and the greater its influence.

(6) The agricultural society exists primarily for the benefit of agriculture in the district in which it operates, therefore, anything it can do to encourage better farming should be done. As an educational factor the plowing match has in it many possibilities, and its revival and encouragement by the agricultural society would be in the interest of better agriculture and better conditions on farms generally.

The decline of the plowing match was due more to bad management and the encroachment of local and sectional interests rather than to any inherent defect in the institution itself. Under proper guidance and direction it can be made a potent factor in improving the agriculture of any section of the country. A couple of years ago the Department of Agriculture, through its capable and energetic Superintendent of Agricultural Societies, instituted a Field Crop Competition. It is safe to say that no movement in recent years on the part of agricultural societies has created more general interest among farmers than this. Any one who saw the exhibits of seed grain from these competitions at the recent Winter Fairs could not but be impressed with the importance of this work and its value to the farmers of Canada. It is work that should be continued and encouraged in every way possible. But crop production and soil cultivation go hand in hand. Good plowing and careful preparation of the soil are necessary to insure maximum yields in crop production. Therefore every encouragement should be given, not only to field crop competitions, but also to plowing matches and demonstrations in soil cultivation which have in them so many possibilities for aiding in crop production. Place the plowing match on a proper footing, conduct it as an educational feature and not merely as a means of distributing so much prize money, and it can be made of value not only to the farmer, but also to the agricultural society A weakness of the plowing matches of the past was that there was no one sufficiently skilled in soils and soil cultivation to direct and make them effective along educational lines. Placed under a uniform system and under a central official who would be able to send competent men to lecture and give demonstrations on soils and soil cultivation generally, the plowing match becomes an agency for good educational work second to none in the agricultural field to-day.

In conclusion, we would like to bring this question to the attention of the Minister of Agriculture. We believe the Government would be justified in making a suitable grant to assist in re-establishing the plowing match. It would fit in well with the Field Crop Competitions and make them more effective as a means of stimulating large crop yields in this country. Good plowing is at the basis of soil cultivation and good soil cultivation at the foundation of crop production. Larger crop yields make for greater agricultural wealth, and anything the agricultural society can do towards attaining this end should receive every attention. Revive the plowing match on

safe educational lines and encourage it in every way possible is sound advice at the present time.

A Delegate: I would ask Mr. Wheaton if he would advise going back to the system of using the old-style plow? Would he advise the farmers generally to do that, using three or four horses, or would it be better to continue these plowing matches on more advanced lines?

J. W. Wheaton: It would be folly to go back to the old-style plow. I said that in my paper to show that the principle of plowing is the same as it was fifty years ago; there have been improvements, no doubt, and the latest improved plows in use to-day should be used in connection with plowing matches.

On the way to Bobcaygeon Fair.

J. B. Gould: I fully agree with some of the remarks which have been made, but not with all. The officers of an agricultural society have all they can attend to to make their fair a success without taking up plowing matches. I believe, and it has been truly said, that good plowing is the foundation of agriculture. It follows, necessarily, that with a good foundation you are going to achieve success. You take a business man or a mechanic, he takes an apprentice in and he starts in at the foundation, where it is going to be of some benefit. Now, I believe in a revival of plowing matches, but not on the system formerly in vogue. They should be revived on educational lines

I move that "In view of the need for practical teaching and illustration of better plowing and better methods of cultivation, and in consideration of the splendid success which has attended the Field Crop Competitions, we would urge upon the Minister of Agriculture the expediency and importance of making a special grant for the purpose of conducting plowing matches in the respective districts."

T. Dickinson: We don't use the same kind of plow we used to. I have three boys on the farm, and they cannot plow any better to-day than they

did fourteen years ago. I think these plowing matches are an excellent thing, and should be encouraged.

A. C. Griffin: The plowing match has passed into history. The result is that to-day it would be an utter impossibility to follow out the lines of plowmanship the same as we did in the days gone by with the implements we have to deal with. In the next place, the climatic conditions of our country are changed, and we have, consequently, to minimize our work and do it rapidly, and we cannot afford the time necessary to do scientific plowing. Good plowing, I believe, should be the object of every farmer who is a tiller of the soil, but theory cultivation stands out preeminently to-day over theory plowing. Seed bed preparation is the science which we have all got to look forward to. And another thing, we have not got the implements to do the plowing with. If a man was to pull a plow into the field

The First Plough Span.

to-day and hand it to the boy to start him out plowing in the old scientific manner, there would be no surer method of driving that boy from the farm; because, in the first place he would be discouraged with the field before he got through with it. We have to do so much more work in a shorter space of time than we ever did, because under our climate conditions, if our crop is not put into the ground in the very shortest order in the spring, it had better not be put in. I move as an amendment to this resolution, "That any grant obtained be utilized for agricultural purposes as laid down in the Act."

J. W. Sangster: Before committing yourselves adversely to this matter I would ask that you give it your consideration. One gentleman has succeeded in getting a remarkably distorted idea of what I said. I didn't advocate the old-fashioned iron plow for plowing matches, but the study of the best seed bed. That is the thing we want to get, and then want to sow good seed. It is not compulsory for any Agricultural Society to take these up under this resolution; if you don't want it, don't touch it.

A DELEGATE: Is this a special grant, or is it to be deducted from the one we have already?

The PRESIDENT: It is to be a special grant.

A standing vote was taken on the resolution and the President declared the motion lost.

RESOLUTION *RE* LEVEL CROSSINGS.

"We, the delegates of the Fairs and Exhibitions Associations of Ontario, in Convention assembled, view with alarm the ever increasing slaughter of our citizens at unprotected railway crossings throughout the country, and we would urge that the Federal Parliament now in session, take prompt action and immediately have placed upon the Statute Books of Canada a law that will compel and hold responsible all railway companies for the death of our citizens at such crossings, and that a copy of this resolution be forwarded to Sir Wilfrid Laurier, Hon. George Graham, Minister of Railways, and to the Chairman of the Dominion Railway Commission." Carried.

POLICE PROTECTION IN RURAL DISTRICTS.

By A. J. RUSSELL, COBOURG.

I have been asked to place a resolution before this convention, with regard to extra police protection in the rural districts, and also some letters which will explain themselves. This matter has been taken up by the papers this summer, chiefly by the agricultural press and more particularly by the *Farmers' Advocate.*

Mr. A. J. RUSSELL, PRESIDENT,
West Northumberland Agricultural Society,
Cobourg, Ont.

DEAR SIR,—*The Farmers' Advocate* wishes to congratulate the West Northumberland Agricultural Society on having taken up in an aggressive way the proposal which has been already urged through its columns in favor of some more effective system of patrolling the country side, preserving order, apprehending criminals, and hunting down malefactors, more especially the perpetrators of assault upon unprotected females.

The present constable and fee system is inadequate because it does not supply sufficient incentive for the pursuit and arrest of culprits who are reasonably prompt in making away and at all successful in covering their tracks. With a few hundred salaried mounted men, well-disciplined and organized, an empire of sparsely settled territory in the West is better served as regards rural protection than rural Ontario with its many hundreds of local constables.

It would seem that a force of 200 mounted men, directed from Toronto through local captaincies (one in each district of three or four counties) should fill the bill.

They should be kept actively employed in patrol-work, and might incidentally discharge many minor duties such as weed inspection and the like. The moral effect of such a force, uniformed, mounted, and in telephone communication with local officers, and through these with a central office, would be splendid, going to insure the protection of property as well as the safety of life and person.

Our idea would be that the force should be paid by the Province, a proportion of the cost being probably assessed on the respective municipalities. This, however, is a matter for legislature to determine.

Trusting the Fairs and Exhibitions' Associations will place itself on record in this matter, we remain,

Yours truly,

(Signed) THE WILLIAM WELD CO., LIMITED

Cobourg, February 6th, 1909.

A. J. Russell, Esq.,
Cobourg, Ont.,

President of the West Northumberland Agricultural Society.

Dear Sir,—*Re* resolution moved by yourself, to be submitted to Fairs' Association for approval, and copy thereof forwarded Provincial Attorney-General.

Kindly permit submission of my views and impressions of said important question, that voices the prayer of the isolated citizen now at the mercy of the midnight marauder.

By inadequate force of peace officers in outlying districts and county towns and villages, a large percentage of vile criminals from cities and other places, find the unguarded rural region a secure rendezvous and avenue of escape. Because the perpetrator thereof must in many instances be more or less exposed to detection, therefore police patrol defeats much incendiarism, one of the most formidable problems now facing the community. Proper police protection prevents depredation, outrage, misdemeanor and murder, and saves the county in detective expenses and law suits far more than it costs.

Absence of constabulary vigilance affords ample opportunity for, and actually invites crime, especially in isolated hamlets.

Criminals get hours, sometimes days, the start of pursuers, where police assistance is not immediately obtainable; and the burglar as well as the common thief, ply their labour-saving vocation with impunity, where night patrol deters not. I congratulate you warmly on being the conceiver of the grand system, and the mover of the resolution, having for its great object, a purpose so wise and necessary, and strongly recommend their serious consideration, and earnestly urge the Fairs' Association to adopt the sensible measure, which far too many unfortunate circumstances, that have come under our own observation, have loudly called for.

Yours faithfully,

(Signed) S. Stanley Howell.

Office of County Crown Attorney,
Cobourg, Ont., 20th Jan., 1909.

Dear Mr. Russell,—In reference to your conversation with me, and as to the necessity of one or more paid constables in the various Counties of Ontario or for a rural Mounted Police, I may say that in common with other County Crown Attorneys I have long felt the need of such a force in case of criminal offences outside the towns.

As it is now, constables are paid by fees which do not remunerate them, and these are necessarily occasional, with the result that most rural constables give only minor attention to the work. The further result is that we have to ask constables paid by the towns to leave their own work, and this they are seldom able to do at short notice.

I agree with the writer of a recent editorial who stated that "the whole system of rural constabulary has broken down," and that a new system is required.

Yours truly,

(Signed) W. A. Kerr.

I must just cite a case. The day the Colborne Fair was held, that is in East Northumberland—two farmers were attending that show, and in their absence, one of the houses was entered by somebody and $50 taken; in the other case a gold watch was taken. They didn't know of the theft until they returned home, and discovering their loss, they immediately communicated with the County Constables in Colborne. One was a veterinary surgeon, and the other one a carpenter; They didn't want to go after the criminal in the dark; they rang up Mr. Kerr, and stated the case, saying they knew who the man was, and Mr. Kerr tried to get Chief Rose to go down. These men refused to leave their own work. Meantime, the thief got away. Another instance, Mr. Charles Porteous, near Millbrook took in one of these travelling gentlemen, gave him a good dinner and this fellow hung around the neighborhood, and as the man was milking his cows near his stable, this tramp demanded some money, and, on being refused, pulled a revolver and shot him three times in the face, leaving

him for dead. He managed to crawl to a neighbor's, but the fellow got away and took the money with him. If there had been a mounted police officer in the locality, this man would not have got away. About Christmas time a man by the name of Culp, one mile from Beamsville, had his place burned down. This crime was committed by tramps. The object of this resolution is to urge the Government to do something in order to facilitate the capture of such scoundrels that are terrorizing rural communities. I therefore move the adoption of the following resolution:

"Whereas crime in rural districts committed chiefly by *vagrants*, and the *increased foreign population* is inefficiently coped with by our present system of County constabulary, we respectfully advise the adoption of either a rural mounted Police Force for the Province of Ontario, or that the present system should be supplemented in such manner as may best attain better rural Police protection, and that a copy of this resolution be forwarded to the Provincial Attorney General, at Toronto."

Part of the Procession.

R. A. Stokes: I am interested in the agitation that has been going on in the papers for some time with regard to better rural police protection. I live on the border of the St. Clair River, and of course we have a great deal to contend with in people crossing from one side to the other for different crimes commited on either sides of the line. Not very long ago a case came under my observation, where on a Sunday evening, a girl of 15 years of age had eloped with a man 23 years of age. They passed my place, and, although they were strangers in the vicinity, I did not take particular notice of them, and naturally at that time did not know what was going on. About two hours after that the Chief of Police of one of the towns came enquiring if I had seen the couple. He then told me what they had done. The fellow had gone into a house and had taken several important souvenirs away with him while the people were in church, and they had tracked these two to a certain distance and lost them in the darkness. There was a house

nearby where an old couple were living, and I thought that might be a good rendezvous for them for the night. When we got there we found that the young fellow was staying with the girl, living as man and wife. As soon as we put in an appearance, he skipped out through the window, and we didn't know where he went. The Chief of Police had to return back to his town where he was paid for his services, and had to give up the chase. I called up the constable, and he said, "I won't go; I am only paid for the arrests I make." The fellow travelled all night and he got out of the vicinity altogether. He was arrested quite a long while afterwards as a result of an item in the paper. We, in the rural municipalities have no protection in that way. In the towns and villages we have, and it is all right, but when we reach the rural districts we cannot get prompt police action, and, in consequence, the culprit has plenty of time to get out of the country, before he is apprehended for his crime.

"We must be in time for Bobcaygeon Fair."

A. J. Russell: In regard to the number of mounted police for each county, it has been suggested by a leading trade journal that two for each would be quite sufficient. Should we ask the Government to amend the present system, and have two for each county.

A. R. Ewing: This matter has been brought up at every session of our Council and we thought of appointing a Board of Police Commissioners for the County, but we found the statute would not allow us, and we have memorialized the Government asking them to allow the Counties to appoint their own Police commissioners. I am very glad that this matter has been brought up, as I believe it is of great importance to the rural districts.

Geo. L. Miller: We lose sight of one essential in this regard—we as delegates here do not realize how these people are to be paid. Do you think it would be right for us to apply to the Provincial Government asking them to provide us with police protection and the residents of the City of Toronto should help to pay for it when they have to pay for their own? This is an

important question, and the Department should take some steps, either by statute or otherwise, to compel the different municipalities or the counties to live up to that statute in the enforcing of it.

A. J. Russell: It was left to our legislators to settle that question of paying the constables. We have no right to dictate to the Government how these are to be paid. I don't think it is right to leave the payment of these constables to the County Councils, for the simple reason that they change frequently; the Government is an organization that stands for at least a term of four years. This is a very important matter, and one that deserves the consideration and support of the delegates here to-day.

The President: This question has been discussed fairly well. It is certainly an important one, and the police protection out in the rural districts is not very good. Any person here to-day could give two or three instances where there is great lack of co-operation in connection with the various officers we have at the present time, and the object of this resolution is to bring the matter before the Attorney-General in the hope that the present system may be amended in such a manner as to make it more effective. There would be no harm in allowing this resolution to go through, if it is your pleasure. The motion was then carried unaminously.

RESOLUTION *RE* LAW REFORM.

The President: Mr. Farrell introduced an important matter when he referred to Law Reform. I will read the resolution with reference to that.

To the Prime Minister of Ontario and his Colleagues.—"This Convention wishes hereby to express its hearty approval of the proposed measure of Law Reform as outlined by the Attorney-General, and trusts that your Honorable body will give it your best consideration. The suggested Court of Appeal is exactly what the farmers and business men of this Province desire. The extension of the Jurisdiction of Division Courts also meets with our hearty approval."

THE NUMBER OF DIRECTORS.

A Delegate: Where an Agricultural Society requires six additional directors, is it necessary for that society to have the sanction of the Minister of Agriculture from year to year?

J. Lockie Wilson: It is not necessary to renew the application after permission is once given.

D. Evans: Our Agricultural Society was formerly composed of five separate ones. When the new Act came into force a large number of the directors of these different branch societies were cut off. Why could not the law be amended so that we, instead of having nine, should have say, twenty-four or thirty. I remember the time when we had forty-eight, and I would like to see the law amended so that each society could elect as many directors as the circumstances demand up to a certain limit, say probably

thirty or thirty-five, because you can get more out of men when they are in office, and when some responsibility is placed upon their shoulders.

R. H. Leary: I was going to make a motion along that line. I would like to see it amended so as to allow the Agricultural Societies to increase their directors to twenty-four.

Johnston Ellis: I would suggest that you have a Chairman for every department in your show, and make that man do his duty. As President, I have nothing to do but walk around and shake hands, and the directors do all the work. We have appointed on the Board a Chairman of Light and Heavy Horses and every thing else in the same way. A book is left with the Secretary, and he records the time. This is a very good idea, and has worked very successfully with us.

A. R. Ewing: The more good workers you get into the society, the better it is.

A Delegate: Would it not be better to allow this matter to stand over for another year? The tendency at the present time is to reduce rather than increase the number. I introduce a motion to the effect that it should stand over, and perhaps Mr. Wilson may be able to prepare a paper on this question and bring the matter before the convention for discussion next year.

Rocklyn Fair.

J. Lockie Wilson: In reference to this question, the law stands now, that with the permission of the Minister you can get six additional directors. If a request is received from a society to have its Board of Directors increased, we investigate the matter, and if we think the reasons are sufficient, we give them permission to do so. I know of some societies in the Province that really require a Board of eighteen or twenty to carry on their work successfully.

THE BEST WAY TO SECURE THE PROPER NUMBER OF QUALIFIED JUDGES.

By R. S. Hamer, Perth.

The question as to the best way to secure the proper number of qualified judges for our fairs was to have been taken up by Mr. Grisdale. I did not come here in the expectation of having to take up the subject at all. I was asked by Mr. Wilson to lead in this discussion; that is all I expected would be asked of me.

The subject can be discussed from two standpoints—emphasizing the number and also the qualifications. It is not a question that can be settled off-hand, but we can discuss it, and, perhaps, assist Mr. Wilson to some

"When the Frost is on the Pumpkin and the Corn is in the Shock."

extent by the discussion on the selection of judges and bring out some suggestions as to increasing the number or with regard to their qualifications.

Regarding the selection of judges, the only source to which we should look properly for expert judges is to the breeders themselves. The breeders and the men who are handling personally the stock are those who know more about the breed and type and have a better idea of what are the requirements of the Shorthorn Breed, for instance, and also by reason of their raising and seeing stock and being with them every day, watching them develop and seeing more of them than the man who is not actively engaged in that branch. Yesterday Mr. Wilson gave us in part the system as to how these

judges are appointed or selected, and that part of the discussion might properly centre around this question. It has occurred to me that one source of getting in touch with the right kind of men for this position might be through men that are on the list—men who are out through the Province during the fall season judging at the different fairs, being brought into touch with the men that are inspecting the stock, having conversations with them, having a chance to see just exactly how they go about the special lines of stock they are handling, and also getting a line, as you call it, on the men who might make good judges themselves. The men that we have on the list to-day are big enough men, and ought to be able to judge and size up human beings as well as animals, and be best posted to inform the department as to where the better men can be secured. That channel should be used to a greater extent. That is one way by which these men could be picked up throughout the country.

Another important matter is looking ahead a little and developing the younger men. There are more opportunities for this than formerly. In some of our fairs they are inducing them to judge horses. It is sometimes done by our district representatives who are located in the counties; they bring out the young men 16 or 18 years of age, and give them a chance to judge stock and get them interested, and it does so more than anything else in that line of work.

Then, leaving aside the selection of men, you might spend a few minutes profitably in discussing the importance of their qualifications. In regard to finding out whether we have selected the best men possible for the positions, I may say that I have seen discussions in newspapers and so on, whether it would not be a good plan to pick out the men and have some person who is a well-known live stock expert pass an opinion upon their fitness to occupy these positions and go out to judge at our local fairs. Prof. Day, perhaps, would be the first one to oppose any such suggestions of that kind. A good plan would be to pick out a man and let him go on the road in the first place for himself, and Mr. Wilson could find out whether he was satisfactory, and whether he would be a fit and proper man to appoint as a judge. If there was any dissatisfaction then the man could be taken off.

The Department last year took a step in the right direction in including in the report of the Agricultural Societies the cuts of typical animals and live-stock, and score cards, and placing them in the hands, not only of the men who are judges, but perhaps prospective judges, showing what is required in these special lines of stock laid down systematically as it is in the score card. That is an idea that perhaps could be developed further still. Considering the large number of men which were sent out last year, and the expense involved, perhaps the Department could go on further improving by sending out a standard treatise on the judging of live-stock which I have in mind. It would be a very good thing to place in the hands of live-stock men, who are going to judge at our fairs; it gives them a better idea of the breed and market requirements in the different classes of live stock. That is an idea that should be developed to some extent in the matter of improving our judges in addition to the actual practice they get on their own farms throughout the country. I do not know whether it would be wise to suggest that the new men who are to be put on should be expected to take a short course, say at Guelph, before going out. That would greatly benefit any man—not so much, perhaps, in their actual judging, that is a matter of actual practice—but as Prof. Day expressed it, it would be a means of developing his *tact*, and his system in giving reasons when he is compelled to give them, and develop him in the art of handling a judging ring and in

handling the exhibitors and in managing things so that no person will be unduly sore concerning his decision in any particular case.

T. A. M. Ferguson: There should be some system of appointing or selecting judges in such a way as to give greater satisfaction all around. A man may be qualified—he may know a good horse or a good beast when he sees it—but he must also be able to go over and examine these animals and be in a position to give satisfactory decisions.

The President: The question before the convention is "How to secure the proper number of judges for our fairs." It is not a question of judgment; it is a question how to *secure* judges. The speakers are getting a little bit away from the subject; they don't appear to quite understand the matter under consideration.

D. K. Ross: How far does this matter of judge selection go—just in stock? How about grain, roots and so on?

J. Lockie Wilson: From a stallion down to poultry, roots, vegetables, and grain.

D. K. Ross: Do you supply expert judges in ladies' work?

J. Lockie Wilson: We do; and some of them have given splendid satisfaction.

A Delegate: I saw at one fair what I considered was a great educator; they had three or four boys about sixteen years of age, and they went over the animals first—they had tickets upon which to register their decisions—and after the prizes were awarded, they showed the results of their judging, and when it was summed up they had placed first, second and third. I think that is a great educator.

John Bright: I have listened with interest to the various points brought up in connection with judging and judges. Regarding the question of Departmental Judges, the appointment of them has been carried on, perhaps, as well as it could have been. I consider the reports as requested from the secretaries of the societies to the Superintendent of Fairs are a good check. It shows how the men are succeeding. We know from experience that people are not always satisfied with the judges. If the Superintendent gets an explanation from each of the secretaries of the fairs where these men have been judging it will assist him in any action he may desire to take in the matter. A recommendation from the breeders in the different lines of stock in the Province of Ontario would be a guidance in selecting judges. The question is, to get one who is known to have a reputation for honest and fair-dealing; a man who is not going to be bought, who will place the ribbon where it belongs. These are the men who will prove successful judges, and will give the greatest satisfaction to all concerned. The judges should not be criticised if they make an honest mistake trying to do what is right. They should have the sympathy of the officers of the societies.

DELEGATES APPLY FOR INCREASED GOVERNMENT GRANT.

The convention adjourned at 12 p.m., to permit the delegates to wait upon members of the Government and present their claims for an increase in the Government grant from $70,000 to $100,000.

The following Ministers met the delegation: Hon. J. S. Duff, Colonel Matheson, and Dr. Reaume.

H. J. Gould: As President of the Fairs and Exhibitions' Association of this Province, I have the honor to present to you a body whose influence,

Wright Bros.

Poultry Farming, Brockville.

I have no doubt, you will readily recognize, and that you will also appreciate the importance of the question which we are to present to you this morning.

You are aware that we are holding a two-day convention in Toronto, and we have delegates in attendance from nearly every county in the Province—men who are experts in their particular lines of business and who are here to devise ways and means whereby they can further the interests of agriculture. You have had the opportunity of listening to some discussion upon the matter in the interests of which we are here to-day; that is, in regard to an increased Government grant to the societies throughout the Province.

We are already getting $70,000, and during the discussion we had last evening upon this question, the consensus of opinion was, that the mode of apportioning it was quite satisfactory we don't ask you to make any change in that regard, but what we do believe is, that the appropriation is not sufficiently large for the amount of work which we are doing. The other speakers will lay the matter before you in detail. I have pleasure in introducing to you, as our first speaker, R. E. Cowan, Galt.

R. E. Cowan: As a member of the deputation selected to appear before your Honorable Body this morning, I trust I will not exceed the desire which you have expressed, and I shall endeavour to be as brief as I possibly can. At the outset, I have to thank the Ontario Government, past and present, for the assistance which they have given to the agricultural societies. The grant has remained practically stationary for nearly twenty years, and we appear before you to-day to ask for a substantial increase. We feel that the interests of the agricultural societies at this later day demand such an increase, and we ask it not alone for the benefit of the farmers of the Province, but also of that of all the people of this great country generally, because the interests of the farmers and business people are so intertwined.

One line of argument which we might probably put first will be the changed conditions in all agricultural lines of work. We would no more think of holding our annual fairs and exhibitions on the prize lists which were issued forty or fifty years ago than we would of returning to the days when we had to transact business without the telephone, and when we had not all the other modern conveniences which we, at the present time, enjoy. Farming has become more expensive, competition keener, the increased cost of living, and the increased price of labor, which farmers have to pay at the present time, are questions which necessitate greater returns and more scientific farming.

The Province of Ontario enjoys an unique position amongst others of the Dominion. We in Central and Western Ontario particularly, are so situated that we are, as it were, the Mecca of the manufacturing industries, not alone of Ontario, but of the broad Dominion as well. The land has increased in value on account of these manufacturing industries: we have to put forth greater efforts than ever before, in order to secure the necessities of life. Now, as you are no doubt aware, agricultural societies are the foundation of our larger exhibitions. I have heard the expression made by the Hon. Senator Beith, that had it not been for the township societies and the smaller annual exhibitions, his future success in great exhibitions of the world would never have been heard of: he never would have obtained the results and degree of success which he has. I also have it on the authority of Manager Weatherall, of the Crookston Park Stock Farm, Galt, that had it not been for the existence of the agricultural societies and exhibitions in the counties of Waterloo and Wellington, Miss Wilks' successes at the Industrial Exhibition, Toronto, Madison Square Gardens and the Chicago Horse Show,

would never have been heard of. The success of their efforts at the smaller agricultural societies and fairs spurred them on to greater things.

Now the work of the agricultural society has been broadening. Before I come to that, however, I might just instance the work of the old Provincial Exhibition; the prize list which was offered by it—the old Board of Agriculture as it was properly called—and the prize winners in that exhibition. They came from the country where good stock has been bred, where the foundation was properly laid. If we want good stock along the line of beef cattle, or heavy draft horses, you go to the counties of Wellington, South Ontario, Waterloo, and Middlesex, and you will find them there in greater proportion than in any other part of the Province. The prize winners at the old Provincial exhibitions came from these districts, and it was a spur to the exhibitors at that time, the foundation of whose successes was laid at the smaller agricultural societies.

The work of the agricultural societies has been broadening. The Department inaugurated a Field Crop Competition two years ago, and ten societies entered; last year it showed a very material increase. All the money was taken up which the Government granted for that purpose, and enthusiasm and success attended the efforts of the farmers who entered these competitions, and not alone for their own material welfare, but for the advancement of the growing of grain crops throughout the Province. I have no doubt that this feature, which is now simply in its infancy, will grow and prosper and that its influence upon the farms and farmers of the Province will be materially increased. Seed fairs were also held throughout the Province, and we got a special grant from the Department for that, for which we are truly thankful. The grants which have been made in the past have all been taken up in order to further advance the work along the lines of agriculture and agricultural societies as clearly defined in the Act. We want a larger grant from the Department; our growing needs demand it. The Government of the Province of Ontario and for the Dominion are taking into consideration the question of technical education. No country can spend too much money in education, provided it does it wisely, and we hear considerable discussion amongst farmers about the grant to the University for higher education of the professions; we cannot have them too highly educated. The farmers of this country, I am glad to say, are growing away from the idea that the grant to the University at Toronto is too high; they now realize that it deserves the support of the Government of Ontario. Many arguments might be advanced for the support of our contention that the grant should be increased to $100,000. We trust, and we know, that our request will receive the consideration of the Department of Agriculture.

More particularly addressing Hon. Mr. Duff, the speaker continued: We trust that you will have, sir, sufficient weight with your colleagues in the Cabinet, and the Legislature, and that you will lay before them such lines of argument as will result in our request being granted; that the whole question will be sifted out, arguments will be advanced, and we trust that in the last analysis our interests will be weighed in the balance and not found wanting.

D. Evans: As one of the representatives of the Fairs and Exhibitions' Association of Ontario, whatever I have to say will be so small and insignificant in comparison to what argument could be advanced for the basic foundation of all wealth of this great Province, that I feel somewhat diffident in putting forth any argument, because I am going to presume that you are aware that it is education in any direction that builds up a country, and it is, therefore, from an educational standpoint that I shall address you.

With regard to the Provincial University, you are expending an exceedingly large amount, and properly so, and I claim that we are getting the full benefit of any money that is expended in that way. If we take the history of this Province with regard to the amount of money that has been granted the agricultural societies—$70,000—twenty years is a long period. We have made considerable advancement in the way of population, and in the opening up of new territories which are to-day pressing a claim upon the particular grant we have been receiving, and no one can tell in the near future how much more it will encroach upon it. From an educational stand-

Black Langshan Cock.

point, in the opening up of this country, agriculture will play a very important part, and we trust that you will put forth your very best efforts to have increased the grant which you have been giving us for this very laudable purpose. I do not need to refer to the benefit that this country gets from the various phases of agriculture, or the amount of money that is expended by the different agricultural societies in fostering the breeding of thoroughbred stock, in raising the best that the fields are able to produce, and in giving prizes in various lines. It would be for the advancement of the best interests of our civilization.

I know that as a representative of this great Province you in your wisdom, are more fully cognizant of the facts than I am. I am simply going to leave the matter in your hands, because you wanted us to be brief, and I trust you will see your way clear to granting our request for an increase in our grant of $30,000, to enable us to go on and carry out to a greater fruition the work of the various agricultural societies.

Hon. J. S. Duff: I must thank you and the gentlemen who have been associated with you, for the able and eloquent manner in which you have set forth your argument in favor of the increased grant which you desire at the hands of the Government. I can assure you that your arguments will be taken into consideration, but I would like to call attention to the

Barred Plymouth Rock Cock.

fact, that as a result of your calling last year on the Minister there was an increase of $7,000 in connection with three items—the Field Crop Competition, Live Stock, and Seed Fairs. The results of this movement are such as warrant the Government in making some further grant in that direction. I would call your attention to another fact: that while the $70,000 have been voted as a grant for a great number of years to the agricultural societies, yet in other ways it has been increased until to-day I suppose you would be surprised if I told you that last year the expenditure on the part of the Government in connection with fairs of different kinds—not the agricultural

societies purely and simply—but the fairs and exhibitions, all that comes within the range of your work—was not far from $100,000.

I was glad to hear the speakers say that the main idea was to use this towards the advancement of agricultural education. I was also glad to hear what was said in reference to the expenditure of the Government on the University of this Province—because we have farmers here and there in this Province who criticize the action of the Government in connection with expenditures made in that direction. I am very glad that you endorse our position in that regard. I also observe that it is along educational lines that you ask the Government to move. I would remind you of the fact that our

Light Brahma Cock.

expenditures have grown by leaps and bounds, and I suppose you would be surprised if I told you that the appropriations last year for agricultural purposes in this Province were almost three-quarters of a million dollars. This, of course, includes the large expenditure in connection with the agricultural college. We appreciate the great work you are doing throughout the Province along agricultural lines. And while the regular grant of $70,000 has not been increased, the increases have been on other lines, and very largely on those that you have indicated to-day—the lines which make for general agricultural education throughout the Province. I know you

are all thinking and sensible men, who know, perhaps, as much with reference to the revenues of this Province and its expenditures as any member of the Government or Legislature does. The Government after all, are largely dependent upon the income from certain sources, and we are always willing to do the best we can in the interests of the people; but I feel sure that no one here would wish us to make any appropriation or expenditure than would mean an excess over our ordinary revenue. I can assure you that the Government will be glad to help you as far as income will warrant. I am satisfied that so long as I have the honor to have a seat in the Cabinet, and so long as I have associated with me such men as Hon. Colonel Matheson

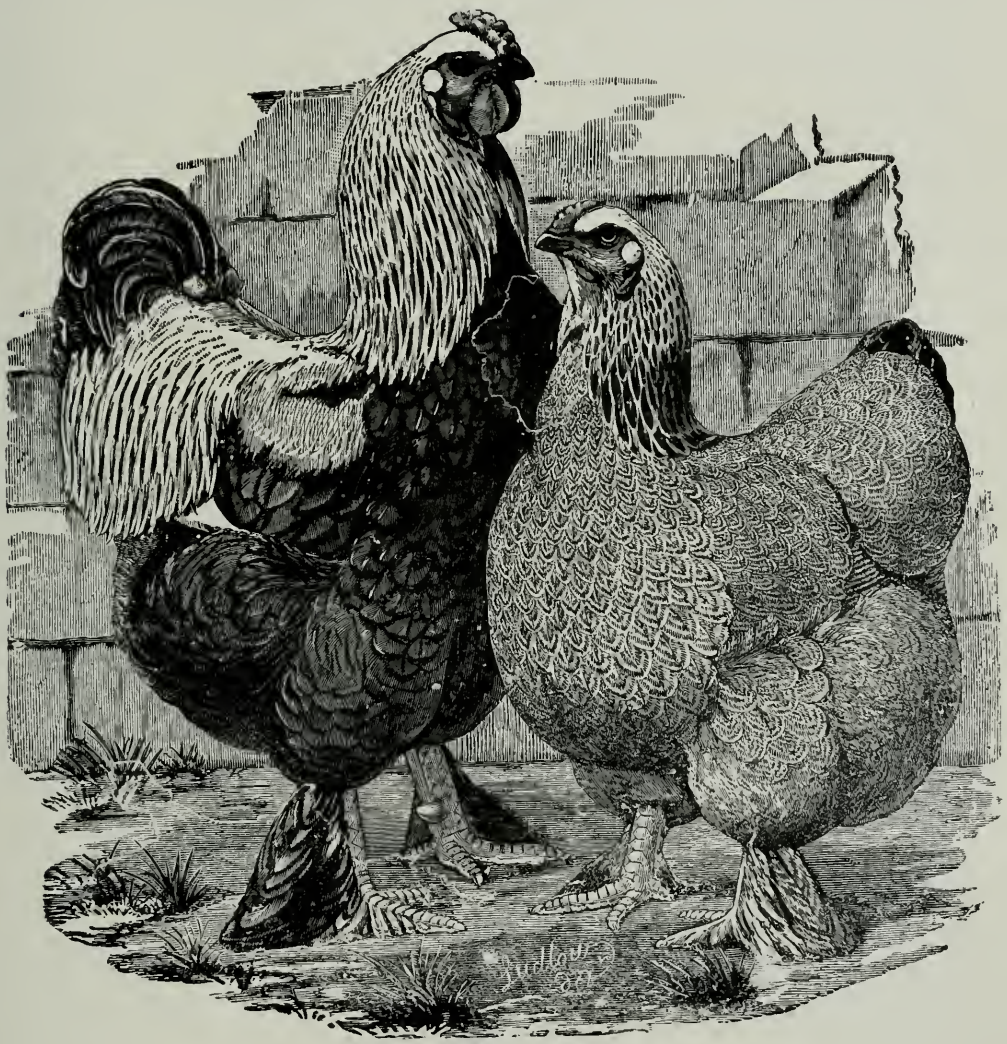
Light Brahma Hen.

and Dr. Reaume, the agriculturists will receive our careful attention. I thank you for being here, and can assure you that the matter respecting this grant will receive due consideration at the hands of the Government. I now ask Col. Matheson to address you.

Hon. A. J. MATHESON: I am very glad, gentlemen, to have this opportunity of meeting you. I have been deeply impressed by the way in which the speakers have presented your case. They appealed to me as men asking what is reasonable. I would, however, like you to bear in mind that we have many calls upon us; the hospitals, asking for more money, and with the great north country rapidly developing, and new railways it means not

only surveying the country, but new buildings. I do not know whether any of you are from the north country or not, but there they are a persistent lot of men; they want to get every dollar that comes out of the lumber spent up there. I believe that the lumber belongs to the whole Province, although they should get a reasonable amount.

The increased expenditure of the Province in agriculture has shown good results; you are a very important body and the backbone of the country. Your grant might be reasonably made a little more and it could be utilized



Dark Brahmas.

by you to good advantage. I understand full well how the farmers have taken hold in the last twenty or thirty years and improved their stock, and seed grain, buying their own land and producing the best from that land they can. I would like very much to assist you, because I feel there is good value given every time, but you have got to consider that we are spending now practically all the revenue, and we must keep our ordinary expenditure

within our income. It would not be a good example to set the people of this Province to have the expenditure exceed the revenue, and we have not the amount of income we would like in order to be able to meet all the demands that are made upon us.

Speaking about hospitals, surely that is a worthy object, and one which we should aid in every possible way. Men who are sick should have some place to go where they will be taken care of. You have them, and many of you have given good subscriptions towards their sustenance and support.

I am glad to hear your reasonable comments regarding the University. I would ask, where is your Public School education if you have no High School? Where is your High School if you have no University at which to educate these men. I might mention that many of the students attending the University are farmers' sons. Are you going to prevent these boys from having a chance to improve themselves and entering other pursuits? They might not have a tast for farming, and may desire to enter some other vocation. It does not necessarily follow that because a man is a farmer his son must also be one. There are fewer failures in farming life than in any other profession in the Dominion. Take one hundred farmers and one hundred professional men or mechanics, and average them, and you will find that three-quarters or four-fifths of the farmers make good and not one-fifth of the others. There are hundreds of lawyers in this city to-day who don't make salt for their porridge. A man would do far better to stick to the farm. They should appreciate the chances and the independence they have as farmers. There is no body of men in this Dominion so independent as they, so long as they keep out of debt. I thank you for your attendance, and for the reasonable way in which your case has been presented. I won't make any promises, but I am sure your case will receive due consideration at the hands of the Government.

Hon. Dr. Reaume: I don't know that it would be wise for each and everyone of the Government to give their opinion, for then you would know exactly what to expect and what you were going to get. I will only say this, that I did not expect to have the privilege and pleasure of meeting the representative farmers of this Province to-day. However, I am very proud and glad to be here. I accepted the invitation of the Minister of Agriculture to come and meet you and hear what you had to say.

Perhaps you may be interested in knowing that I am a direct descendent of agricultural stock; my forefathers were amongst the very first pioneers in this Province over two hundred years ago, and for all that length of time there has never been a break in the Reaume family until I was born. I worked on the farm, and my brothers are farmers. I mention this in order that you may have some idea where my sympathies are. I like to meet the farmers; they are, as Col. Matheson truly said, the backbone of the country. When the farmer prospers the country prospers, when he declines, every branch of industry follows suit.

H. J. Gould: On behalf of the Association, I desire to thank you for the very courteous manner in which you have received us, and for the impartial way in which you have met our request. Notwithstanding all that Col. Matheson has stated, we still feel that we shall have our request granted, and are content to leave the matter in your hands.

The deputation then adjourned.

Partridge Cochins.

GROWING BETTER FIELD CROPS IN ONTARIO.

By Prof. Zavitz, O.A.C., Guelph.

As I come before you to-day I am reminded of the first time I spoke before the Fairs' Association of Ontario. It was a number of years ago, and I had to ask two or three people before I could find out exactly what this organization was. There were about fourteen or fifteen present, and one of the points of discussion was, whether they would hold another annual convention and issue a report of that meeting. I was the first person outside of the Association that ever took part in the meeting. I am asked to speak this afternoon on a very important subject, viz.: the growing of better farm crops in Ontario. This is a great agricultural Province, 1,000 miles lone and 750 miles wide, and its field crops had a market value last year of about one hundred and sixty millions of dollars. We think a great deal of our live stock, our horses, cattle and sheep, swine and poultry, but we are going to consider just for a half an hour this afternoon the products of our fields. If we look over the statistics of the Bureau of Industries we will find that the market value of the farm crops grown in Ontario was almost exactly equal to the combined values of all the horses, cattle, sheep and swine in the whole of Ontario. I thank your Superintendent, Mr. Lockie Wilson, for the opportunity of bringing this important matter before you. I can only touch upon a very few points, and only briefly and in a general way. In the first place I would emphasize more underdraining. Some farmers have been doing a good deal of this work. It would be much better if the farmers would do more of it. There are certain crops that will not thrive on land that is cold and wet, and a great many of our fields would be much better and would pay handsomely for underdraining.

The second point I would refer to is in regard to rotation of crops. That is an exceedingly important subject. The growing of crops in connection with experimental field work at Guelph is done on a rotation system, the first year grain and the next cultivated crops. One should study the rotation most suitable for his own farm and the conditions by which we can obtain the very best results. It is a subject that we should give even more attention to in the near future than we have done in the past. We should have more economy in the use of plant food. One reason why we get better crops than we formerly did is because we are paying more attention to the fertility of our farms. We make better use of the manure. It is a good thing in some respects that we have not as many summer fallows in Ontario as we used to. I have found out by examining the rainwater that passed through the soil that if we have a summer fallow and we collect the drainage water that comes through the soil of the summer fallow, we get about four or five times as much drainage water from the soil which is summer fallowed, and at the same time the composition of that drainage water contains a very much larger percentage of plant food than where a crop is growing. After a summer fallow the water in the tile contains a much larger percentage of plant food than in cases where a crop is grown. While we used to get good crops afterwards—which is the result in a good many cases I believe we were exhausting our land by allowing a large amount of the plant food to go away in the drainage. If we summerfallowed in large quantities we would exhaust our surface soils. While it is important to pay particular attention to the fertility of the soil, we do not pay sufficient care to thorough cultivation. I have walked over fields many a time when the land was lumpy and

where there was not that careful preparation of the seed bed which there should have been. Use better varieties of seed grain. Perhaps one variety would give the best results one year and another the next. I am thoroughly convinced, after studying some thousand varieties of farm crops within the last twenty years (studying practically all of them for five years, at least)—after watching these varieties that give the best results at the College and throughout the Province—that if we are looking to our own interests we are going to secure those varieties of farm crops which are best suited for our farms. It would pay us to watch our neighbors and see what crops grow best and also become experimenters ourselves. I advocated that twenty years ago, and have become more thoroughly impressed with its importance. The people of Ontario are getting more into that spirit. We started with only twelve experimenters, and that number has increased until last year there were 4,420 over Ontario conducting experiments with farm crops, in order to find out the very best varieties for their own land. The most progressive men in Ontario are going to do that sort of thing to the advantage of themselves and their neighbors.

The next point is that of sowing. Sow large, plump, sound seed of strong vitality. We find through a large number of experiments, extending over several years, that good seed will give an average of about twenty per cent. larger yield per acre than small seed; plump seed will give an average of about nineteen per cent. greater yield per acre than shrunken seed; sound seed which has not been injured by the separator will give from 50 to probably 500 per cent. greater yield than the seed which has been injured in the threshing; wheat which has sprouted in the autumn before it was harvested in the barn will deteriorate in value in point of germination manyfold. If the wheat is out through a rain and becomes even slightly sprouted, not more than 66 per cent. of that grain will grow; but if it is badly sprouted, only 20 to 40 per cent. will grow at all, and the plants that do grow will be very uneven.

The next point I would emphasize is, sow in the right time; that is a very simple thing, but it is of extreme importance. I speak now more particularly of spring wheat, oats, and peas. We conduct experiments by sowing drills and broadcast. We get on the land as early as we can to work it to good advantage. We sowed the same variety about a week later, then a week after that, and a week later, and still a week later than that again, and so on in all these different kinds of grain, sown broadcast and with the drill on each of these different dates in the spring of these different years. The average results show that for spring wheat we obtained decidedly the best results, both in the yield of grain and in volume per bushel from the earliest seeding, four bushels per acre more than the second: and as the season advanced there was a decrease in the quality of the grain and volume in a corresponding degree with respect to the later dates. I have noticed, taking the average of our experiments, that for every single day's delay after the first week is past, there is a decrease of 56 lbs. of oats per acre, 54 lbs. of barley, 28 lbs. of spring wheat, and 22lbs. of peas. This amounts to a tremendous quantity, hence the great importance of getting in our crops at the right time in the spring of the year.

We could say a great deal in regard to whether it is better to put corn in drills or in hills. From experiments over Ontario for five years from the same amount of corn in rows, we get an average of one ton per acre. Of the total corn one-fifth is in the form of ear corn more than from the seed that is planted in rows. Squares or hills have given us an average over

Ontario, out of a total crop, one-fifth in the form of ear and four-fifths in stalk more than the corn in rows, using the same amount of seed in both cases.

Now in regard to our root cultivation—whether it is better on the level or in ridges. Although it takes more work on the level, we get about two-fifths more of crop per acre. Taking our grain crops and comparing sowing broadcast with the grain drill, it depends on the time of sowing; if we sow very early, with lots of manure in the ground, drills are best, but we get the best results by sowing broadcast a little later in the season. There are a great many questions that we could take up in regard to sowing in the best way. I have only touched upon one or two points. With regard to the work of the fairs, there are great opportunities in the hands of those who are

Single Comb White Leghorn Cockerel.

assembled in this room. What are we doing in connection with the fairs of Ontario for the advancement of the growing of better field crops? Look over your prize list when you go home, and see if there is anything that you can do to improve the agricultural fair from the standpoint of crop exhibits? There are great possibilities and opportunities in connection with the fairs over Ontario that we are not taking advantage of. Go to an agricultural fair, and examine the grain; no name is attached in most instances; there is no information whatever, and little interest taken in this part of the exhibition. What is there of real educational value in regard to the exhibits of grain in the past? As a result in many exhibitions the grain exhibitors have dropped out altogether. Renewed interest could be raised in connection with the grain exhibits over Ontario. Yesterday in Essex I spoke to between 400

and 500 farmers on corn. Even our common things on the farm, such as oats, barley, corn and peas and crops of that kind should be of tremendous interest. A good many of the agricultural societies are losing an opportunity in not getting people interested along that line. Make the exhibits more attractive. That is an important point. On the entry cards in some way or other there should be a place for each man to write in the variety and description of that particular exhibit. There is no education in going to a fair and looking at the different kinds of grain and seeing no name of the variety attached. Offer prizes specially for certain varieties; that would tend to encourage their growth in the locality. One of the great difficulties and troubles of potato growing is the number of varieties. Go into a neighborhood and you will find probably fifteen to thirty varieties grown there. A buyer goes there and it is impossible for him to get a car lot of one variety. If a certain section is more suitable for the growing of the Imperial State, for instance, then go in for the cultivation of that particular variety. The same with the Rural New Yorker No. 2, and so on. And the same with oats. It may be necessary to offer large prizes to encourage the growth of that one

Light Brahmas.

variety in that section, but it will be worth a good deal and you would, consequently, work up great enthusiasm in that work. How many agricultural societies have attractive exhibits of Alfalfa hay and prizes therefor? The competition in fields of standing grain is a great thing. It has done more already in the last two or three years than the exhibits conducted at the fairs in the past fifty, and it should be encouraged. It is a move in the right direction, and needs care in directing it properly in keeping it well organized.

You have been offering prizes for roots and grains, and different kinds of farm stock and so on, to encourage the best. There is another line of work that you should offer prizes for, and I would like to see it carried out. The appointing by this Association of a Special Committee to consult together regarding the attractiveness and arrangement of the material for exhibits of the farm crops of Ontario would be profitable. We don't fully realize what our opportunities are in connection with our farm crops. We have got to make them attractive. Oats, wheat, barley, peas, and roots are not attractive in themselves, but we make them so. There is so much to learn in regard to the common things we have on our farms. Let us do the best

we can for the advancement of this industry which is at the basis of every other. Whatever can be done to improve the exhibits of farm crops at our agricultural fairs will be appreciated and will have a wonderful influence on agriculture.

The PRESIDENT: We all appreciate very much the interesting address delivered by Prof. Zavitz, and the thanks of the delegates are due for the very able way in which he has dealt with his subject.

Rev. D. J. CROWLEY: The matter which I propose to bring before the convention is one which I don't think can meet with much discussion or any adverse criticism. I refer to tendering a vote of thanks to the Mayor of the City of Toronto, and the City Council for their kind permission to use this room for the holding of such annual gatherings as ours. The City Hall is an ideal place to assemble in. It is only right that we should place ourselves on record as being grateful to the Mayor and Council for kindly granting us permission to use this room. I have much pleasure on behalf of the delegates here assembled, in asking our President to tender to the Mayor and Council our hearty vote of thanks. Carried.

JOHNSTON ELLIS: As no doubt most of the delegates present are aware, we have here in Toronto an Institution that is doing splendid work on behalf of sick children, and I move that we take up a collection for the Sick Children's Hospital of Toronto to further its worthy object. The motion was put and carried unanimously, amidst applause, and a substantial amount was promptly collected to be forwarded to the hospital.

A vote of thanks was then tendered to Wm. Laidlaw, the retiring President.

W. LAIDLAW: It has always been a great pleasure to me, for the last fourteen or fifteen years, to be a delegate to this convention, more especially during my term as presiding officer. I thank you for the hearty support you have always been willing to accord me concerning matters in connection with this organization. It has been a great honor to me to be called to preside over such an important body as this, composed as it is of such intelligent men. I again thank you, and have pleasure in introducing our new President, H. J. Gould.

H. J. GOULD: I can assure you that it is a great honor to me, as it should be to anybody, to occupy the position of President over a body of men second to none in this Province, representing not alone capital, but brains. The gentlemen who have preceded me in this position have filled it admirably and with great satisfaction, and it will be my earnest aim and endeavor to fill the office with equal satisfaction, and I ask for your co-operation and support at all times. A resolution should be moved in regard to our Superintendent, thanking him for his untiring efforts during the past year in connection with our association. There are no emoluments attached to Mr. Wilson's office from this association, and as he has devoted so much valuable time and has done so much for us, the least we can do is to pass a resolution thanking him for his efforts in our behalf.

The motion was put and carried unanimously.

J. LOCKIE WILSON: I thank you very much indeed for the hearty vote of thanks you have seen fit to accord me. I can assure you that I am only too willing at any and all times to do anything in my power to further the interests of your organization.

The Convention closed with the singing of the National Anthem.

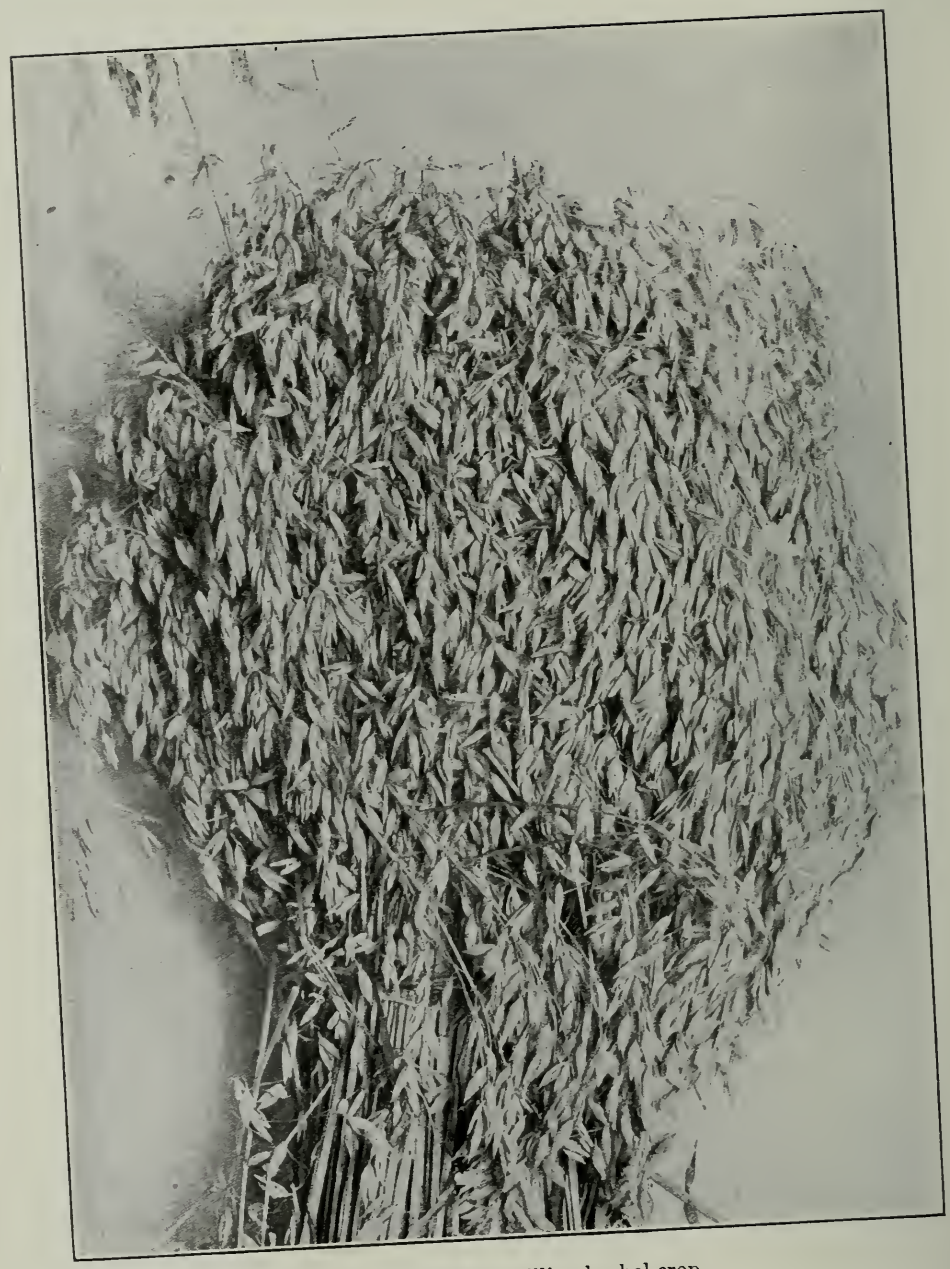
THE GRAIN EXHIBIT AT GUELPH FROM STANDING FIELD CROP COMPETITIONS CONDUCTED BY AGRICULTURAL SOCIETIES.

By Prof. L. S. Klinck, Macdonald College, Que.

There are on exhibition at this fair seventy-six classes of white oats, and we have been repeatedly asked by exhibitors to state why we placed the samples as we did, and to make a few general remarks on the exhibit and that is the reason I am here to-night. I might go on at some length and congratulate the exhibitors and those who have had charge of the exhibit because of the splendid showing made. Seventy-six samples are by far the best number I have ever seen at any exhibition of grain in this country, and it is a remarkable thing to me that we have so many, and that the quality is so very high. Ordinarily, if we get fifteen or twenty samples in a class we have very little difficulty in throwing out one-third or one-half of these on account of the presence of weed seeds, but that did not hold good in this case; there were only a few samples that we could discard on that account, and that increased the difficulty of the judges.

Another thing that made it more difficult was that the samples almost without exception showed that a good deal of care had been exercised in cleaning them. They were clean and fairly uniform throughout. The fact that they were free from weeds I attribute largely to the fact that such an energetic campaign has been carried on the last few years against weeds, and farmers have come to appreciate the fact that pure seed is a great benefit. The first thing I looked for in these samples was weed seeds, and if there were any bad ones in the samples it was at once discarded, no matter how good the grain might be. The next thing we looked for was purity; for instance, in judging oats, if we find wheat, barley, peas or buck-wheat in the samples we say it is not pure, and it will be scored down accordingly. Very few weeds were present, but when it came to the question of purity, and freedom from other kinds of grain, my criticism of the samples as a whole was most severe on that point. If there were barley, wheat, peas or buck-wheat in it exhibitors seemed to think that these things would not detract from the sample. I am safe in saying that full one-half of the grain in the exhibit was thrown out on account of the presence of these other varieties. Take up a handful of these samples, and you would find perhaps one grain of barley, but if you looked at it more carefully you would find a few more. When we got these samples worked down to twelve we weighed out a half-pound of each sample and worked them over and found that there was not a single sample on exhibition that was free from other grain.

One sample got down as low as one barley grain, but some of those that got into the last running had as high as seventeen to the half-pound. Now, you can see the difficulty one gets into by allowing other kinds of grain to come in. I was asked by an exhibitor "Why were my oats thrown down?" When I told him, he said, "I do not think there is any in it;" but when we put it out on little dishes we found that in a pound there would be at least twenty-five or thirty grains, and in a field of grain that would look pretty bad. That is my strongest criticism. In many parts of the country buckwheat has become a curse as bad as a weed, and to see some of the fields you would not know whether they were intended for a crop of buckwheat or a grain crop to be plowed down. If a sample of grain is well cleaned it will be fairly uniform; a number of the samples lack that uniformity. That was my main criticism of the sample that took first prize; there was some barley in it, but in all other respects it stood pretty high. The next point



Ontario's hundred million bushel crop.

we looked for was the degree of maturity, and the condition of the grain, whether it had been cut on the green side or at the proper stage, or whether it had become weather beaten. Two or three samples were thrown out because they had been cut very much on the green side. It has been shown that the best results are obtained when the grain is allowed to ripen thoroughly on the straw. One sample especially had been cut so green that it would probably not run over thirty-eight pounds to the bushel. A few samples were just about right. Some promising looking samples were thrown out; they were a good color and they would weigh well, but the trouble was that these were pin oats—that is the little oat that is attached to the main one. If it is attached by means of a little stalk so that it will not lie in the big one it won't do much harm, but if you get it embedded right in the main oat, while it may be plump looking, and an oat that will weigh well, it will almost invariably run high in percentage of hull. If that oat had devoted all its energies to the enclosing of the meat in one package, it would show more meat and less hull. What we are after is kernel and less hull; therefore, I say just as we can do up two pounds of butter with less paper by putting them in one package than if you put them in two, it is better to have less hull and more kernel. When we cut the samples down so low that we could not determine how they should be placed, we made a test of the percentage of hull and meat. Some of these oats ran as low as 26 per cent. of hull, others would run as high as 40 per cent., and that means if you were to buy 100 pounds of oats of the kind of which I have just been speaking with a thick hull, you would probably get about 60 pounds of kernel, the valuable part; and, if you took the sample that is best, instead of getting 60 pounds you would get 74, an increase of fourteen pounds of meat for every one hundred pounds of grain bought; you see, therefore, that it is a very important thing to get a low percentage of hull.

Then the last point was that of weight per measured bushel. I must say almost all the samples ran full weight per measured bushel, and many of them ran far over. The sample which won first prize ran forty-five pounds per measured bushel, or fifteen pounds over standard. All those which won prizes ran considerably over standard weight per measured bushel.

They lack first in purity, in the second place uniformity, and in the third place a number of them had the pin oats enclosed the wrong way.

The strong point in the samples were, first, their almost total freedom from weed seeds, second, low percentage of hull, and, third, the high weight per measured bushel.

Congratulations are due to all those who have had any part in bringing these competitions to such a successful issue and to those who took advantage of them by entering their fields and grain. Any man who won a premium in that competition has oats of no mean quality, and many who did not win have grain that is almost as good.

As regards varieties, for first prize was won by Thos. McMurchy, with "New Sensation," twenty-six per cent. hull and weight forty-five pounds per measured bushel; the second went to James McLean, with "Irish White," 26.9 per cent. hull and forty pounds per measured bushel; third to John McDiarmid, Lucknow, with "White Danish," 28.9 per cent. hull, forty-two pounds per measured bushel; fourth to John Cockburn, with "Lincoln," 27.1 hull and 39.5 pounds per bushel; fifth to James Baird, with "Sensation," 28 per cent. hull and 41.5 pounds per measured bushel: sixth to "Siberian," and seventh to "White Cluster." That means that no single variety of oat won two premiums.

SCORE OF GRAIN FROM STANDING

Guelph.

Page in report.	Standing in Field.	Entry number.	Standing in grain competition.	Impurities in 8 ozs.							Variety.	Weight per bushel.	% Hull.	Grower.
				Barley.	Bl. oats.	Wheat.	Peas.	Buckwheat.	Wild oats.	Etc.				
8	4	45	1	8	..	..	..	..	..		New Sensation....	45.0	26.4	Thos. McMurchy....
17	2	49	2	3		..	..	..	..	..	Irish White	40.3	26.9	Jas. McLean.....
7	4	13	3	7	..	..	..	..	..	..	White Danish	42.0	28.9	Jno. McDiarmid ....
16	1	26	4	1	..	2	1	..	..	..	Lincoln	39.5	27.1	J. A. Cockburn .....
7	1	28	5	4	..	..	..	..	..	..	Sensation.....	41.5	28.0	Jas. Baird.....
10	1	20	H. C.	8	..	..	..	..	..	..	Siberian.....	37.0	30 9	J. A. Lind.....
16	4	39	C.	3	..		..	..	..	.	White Cluster	41.2	29 6	Robt. McCowan.....
8	1	17	8	12½	..	..	..	..	..	..	Am. Banner.....	.. .	.....	Foster Bros.....
16	2	4	9	10	..	..	..	..	..	..	....	.....	.....	R. M. Loveless.....
16	1	5	10	10	..		..	..	..	..	White Cluster	.....	.....	B. F. Law.....
9	5	21	11	4	.	..	..	..	..	..	Sensation.....	.....	.....	Alex. Cowie.....
13	5	66	12	23	..		..	..	..	..	White Poland	.....	.....	Jno. Hodge.....

Ottawa.

15	3	99	1	5	..	2	.	..	..	..	Newmarket.....	43.7	24.3	Andrew McKay.....
15	3	95	2	10	..	..	..	..	..	..	Mammoth Cluster.	40.0	27.2	Garfield Kennedy...
13	2	94	3	2	..	..	..	..	..	..	Irish White	39.9	27.4	Peter Drummond...
15	1	88	4	1	..	..	..	..	..	..	Siberian	38.3	29.1	Wm. Lewis.....
13	2	103	5	13	..	..	.	..	..	..	Prolific.....	39.8	26.4	Robt. Fisher.. .....
14	3	98	H. C.	....	..	..	..	..	..	..	Am. Banner.....	.....	.....	C. H. Dawson.....
15	5	84	C.	....	..	..	..	..	..	..	Newmarket.....	.....	.....	Jno. Vanstone .....
15	2	87	8	....	..	..	..	..	..	..	Am. Banner.....	.....	.....	D. C. Ross.....
14	5	92	9	....	..	..	..	..	..	..	Sheffield Standard.	.....	.....	J. W. Hall.....
13	1	83	10	....	..	.	..	..	..	..	20th Century	.....	.....	W. Shearer.....
13	1	80	11	...	.	..	..	..	..	..	Tartar King.....	.....	.....	Lawrence Lonergan.

FIELD CROP COMPETITIONS.

GUELPH.

P.O.	Society.	County.	Value of variety. In field. Prizes. No. of entries.	Value of variety. In field. Prizes. Field prizes taken, 1-5.	Value of variety. At fair. Prizes. No. of entries.	Value of variety. At fair. Prizes. Prizes taken, 1-7.
Loree	Collingwood	Simcoe	1	4th.	1	1st.
Richmond Hill	Richmond Hill	York	1	2nd.	4	2nd.
Lucknow	Lucknow	Bruce		4th.	3	3rd.
Aberfoyle	Puslinch	Wellington		1st.	2	4th.
Lucknow	Lucknow	Bruce		1st.	4	5th.
Beamsville	Peninsular Central	Lincoln		1st.	6	H. C.
Ellesmere	Scarboro	York		4th.	2	C.
Clarksburg	Collingwood	Simcoe		1st.	14	8th.
Agincourt	Scarboro	York		2nd.	3	9th.
Coleman	Scarboro	York		1st.	2	10th.
Caledonia	Caledonia	Haldimand		5th.	4	11th.
Anderson	S. Perth	Perth	1	5th.	1	12th.

OTTAWA.

Woodville	Eldon	Victoria		3rd.	2	1st.
Bobcaygeon	Verulam	Victoria		3rd.	1	2nd.
Keene	Otonabee	E. Peterboro		2nd.	3	3rd.
Dunsford	Verulam	Victoria		1st.	2	4th.
Bensfort	S. Monaghan	W. Peterboro		2nd.	1	5th.
Bailieboro	S. Monaghan	W. Peterboro		3rd.	12	6th.
Hartley	Eldon	Victoria		5th.	2	7th.
Woodville	Eldon	Victoria		2nd.	12	8th.
Bensfort	S Monaghan	W. Peterboro		5th.	2	9th.
Lang	Otonabee	E. Peterboro		1st.	2	10th.
Norwood	E. Peterboro	E. Peterboro		1st.	1	11th.

EGGS AND POULTRY.

By A. G. Gilbert, Poultry Manager, Experimental Farm, Ottawa.

The high prices paid for new laid eggs and the better quality of poultry during the winter now rapidly drawing to a close, have been remarkable. No doubt, a certain number of farmers who understood how to have their hens lay in winter and who sent their eggs to a reliable dealer, in one of the large cities, received the high figures. But it is to be feared that the great majority of egg and poultry producers made no effort to get beyond the collector who came round at stated intervals for the eggs, for the country store. In the latter it is most likely the eggs were traded. We have nothing to say as to collector or store keeper. Both men have to make their living, and, doubtless, did the best they could.

Single Comb Black Minorca Cockerel.

Single Comb Black Minorca Hen.

Opportunities of the Different Classes.

Farmers keeping poultry can be divided into three classes, as follows:

1. Those situated near cities and large towns who have exceptional opportunities of selling their goods to the best advantage.

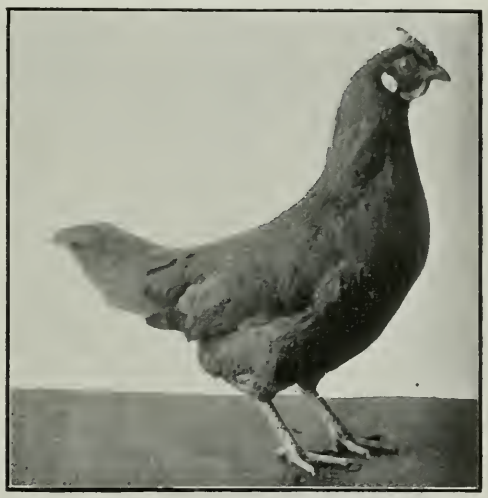
2. Those living near express offices who can readily, by this means, reach the city markets.

3. Farmers who are far away from a market and who go to it only when necessity demands.

Class 1. Those in Class 1 are certainly in the best position to obtain the highest prices. But do they get them? Either through indifference, or, ignorance of the best methods—and it is the former in most cases— they allow the best prices to be taken by specialists who are really formidable rivals. These specialists are usually mechanics, clerks, civil servants, etc. They have read up and become expert in the obtaining of eggs from their fowls in winter, and they receive the highest prices for the same, because they are, for the most part, located in the suburbs of the city, or, near its limits. They usually keep from 50 to 300 fowls, and receive the best prices,

not only on account of their near location to the city, but because they bring none but strictly reliable goods to the market, or, directly to the consumer. Many of these men make a handsome sum out of their hens in addition to what they earn from their daily employment. One of these specialists told me, not very long ago, that he had no trouble in disposing of the eggs from his poultry plant, during last winter, at 60 cents per doz. "And in many cases," he added, "the people came for them. Indeed, we could have sold many more eggs than we had." And the farmers look on with complacency, or, say "What can we do to mend matters?" Why! get the eggs and meet the other fellows on their own ground with an equally good article. And remember that as a farmer you have your grain and roots *at first cost*. The specialist has to buy from the mill, the feed store, or from the farmer himself. Just fancy one of these specialists buying a load of wheat from a farmer, who tells you that there was no money for him (the farmer) in growing that wheat. But the specialist feeds the same grain to his fowls and makes 150 per cent. profit in so doing. Now, what is to prevent the farmer from doing likewise?

Rose Comb Brown Leghorn Cockerel.



Rose Comb Brown Leghorn Hen.

Class 2. Farmers living near express offices, or railway stations, have also good opportunity to send new laid eggs to a city market and to receive a high price for the same. But, unfortunately, they do not so send the eggs, but keep them until a quantity of other farm produce is gathered and it is thought worth while to make a trip to town. Meanwhile, the eggs have become stale. Permit me to illustrate my meaning by relating the following incidents: On one occasion, during a recent winter month, the writer was present in a leading grocery store of the city, when a farmer entered and asked one of the clerks "if they were buying eggs?" The following conversation then occurred:

Clerk: "How many eggs have you for sale?"
Farmer: "Ten dozen."
Clerk: "How many eggs did you bring in?"
Farmer: "Twenty dozen. I have sold ten."
Clerk: "How many months old are the eggs?"
Farmer (indignantly): "They are not months old. They are fresh."
Clerk: "How many hens have you?"

The farmer told the clerk, who immediately offered a price 15 cents below the value of the "strictly new laid article." The price was accepted. In this case the clerk evidently reasoned that if a small number of farmer's fowls had been layers, some time must have elapsed before twenty dozen could have been gathered up. As a result, the eggs first collected would be a stale commodity and a price was named accordingly.

The moral is obvious. But some one says, "It means a great deal of trouble about a few eggs." Almost every week the agricultural papers have letters from farmers showing how they made from $1.50 to $2.00 per fowl profit, in a year. Did they make these large margins of profit without some effort? I trow not.

Class 3. I have much sympathy with these people who are so situated. It seems as if they would have to be content with such prices as they receive

White Wyandotte.

Buff Orpington.

from egg collector or storekeeper. Their aim should be to so reduce cost of production so as to make what margin of profit they have as large as possible. I fancy the summer egg trade, and, perhaps, the rearing of the best types of table poultry might be best suited to their circumstances. Anyway, they can have the freshest of eggs, and how many are the people in our cities who crave for that! It is also a matter of satisfaction to realize that the country—especially the banner Province of Ontario—is becoming so honeycombed with railways that Class 3 is rapidly becoming nearer to good markets.

How to Have the Best Eggs. To have eggs of the finest quality for both summer and winter sale they should be:

1. Non-fertilized.

2. Laid by well and cleanly fed hens.

3. After being laid they should be immediately placed in a cool, sweet-smelling cellar or cupboard.

4. They should reach the consumer as soon after being laid as possible. Certainly within one week or ten days.

How the finer quality of Poultry may be had. To have the better quality of poultry the following conditions should be conformed with:

1. The chickens should be of Plymouth, Wyandotte, Orpington, or Dorking type.

2. The aim should be to have the frame of the birds as small-boned as possible, so that the weight of the chickens, when sold, will be in flesh rather than in bone. This may be accomplished by breeding from the best marked types only.

3. In order to have chickens in the most desirable condition, at the earliest age, it is requisite that they be well cared for and regularly fed from their earliest age.

Experience of many years has shown that if chickens are well looked after and of the proper type described, very little, if any, fleshing by crate, or other means is required to have them in acceptable condition at three and a half, four, or five months of age.

POULTRY EXHIBITS.

How They Can Be Improved.

There is one department at our Fairs and Exhibitions which has certainly not received the attention of Directors which it should, and that is poultry, live and dressed. A few fairs held in towns and large villages do offer fairly generous prizes for live poultry, but they are very largely in the minority, and the others do not make any great effort to encourage farmers to improve their poultry by offering prizes for the breeds which are most suitable for the farmer, thus inducing a good entry of those varieties, the production of which will add so much to the wealth of our agriculturists.

Not so many years ago it was customary for farmers to consider poultry as unprofitable, and they were left almost entirely to be looked after by the women and children. Now, however, farmers find them a profitable line. With dressed poultry and eggs selling at the high prices realized even in the summer time during the past few years and still likely to continue, the selection of breeds of poultry and individuals which are the best layers, or which put on the most flesh in a given period, is receiving a continually increasing amount of attention from farmers. This can be greatly encouraged by offering prizes for such breeds to be competed for by farmers alone.

With a view of obtaining reliable data which would be useful to Boards of Directors in the revision of their prize lists in this regard, the following questions have been submitted to a number of leading poultry men, whose advice, from the fact that they have acted as Departmental Judges for a number of years, should prove of value.

1. What improvement, if any, has there recently been in fowls exhibited at exhibitions?

2. What improvements would you suggest in methods of exhibiting and preparing poultry for exhibition?

(*a*) Suggested changes in Prize List?

3. What do you consider the best breed or breeds for the use of the average farmer?

4. What do you consider the best method of caring and rearing of poultry for egg production?

5. Is an egg exhibit of educational value?

A. G. Gilbert, C. E. F., Ottawa.

1. I have seen much improvement in fowls exhibited at Fairs. Improvements have been noted in (a). Quality of birds exhibited. (b). Better cooping. (c). Greater interest displayed by farmers, their wives and children. The latter, I consider, most important for the young people of to-day, who in a few years will be the dominating force. It is, therefore, advisable

White faced Black Spanish.

that they should see pure-bred birds, well cooped, competently judged, with reasons given therefor, and a neatly and systematically arranged show. The poultry should be grand object lessons.

2. I would suggest the arranging of the birds by breeds, say Light Brahmas by themselves; Barred, White and Buff Rocks in the same way, and so on with Wyandottes and other breeds and varieties. This systematic arrangement would not only make the display more inviting but the work of the judge also easier. The poultry should also be better housed. At some

of the smaller fairs I have attended, they were placed in all sorts of positions and in all kinds of boxes, and some distance from the other exhibits.

(a) Better prizes for the strictly utility varieties. Particularly should this be the case at the smaller shows. This would likely bring out a better class of poultry; perhaps not the first year but in succeeding seasons. A beginner frequently makes his first venture at one of these small shows, and it is most important that his taste for the better marked and best type of the utility breeds should be encouraged and developed. A capable judge should always be obtained and after placing his awards should explain

Andalusian hen.

the reasons for his decisions. These shows, both small and great, should be made bright, attractive and, above all, educational.

3. Barred Plymouth Rocks are the most popular fowl in the country to-day. They have won their way to this position on their merits. White Wyandottes are another favorite variety. Buff Orpingtons are rapidly coming to the front on their merits. No mistake can be made in selecting any one of these varieties. Care should be taken that a good laying strain be chosen.

4. It is very necessary to have an up-to-date poultry house arranged and furnished according to the latest and best plans. Besides a good dwelling

for the laying stock, they should be fed varied rations, kept in moderate exercise, regularly supplied with grit, broken oyster shells and pure water. The best way of making poultry profitable is for the farmer to select a good type; breed carefully from the best shaped and marked birds; and pay careful attention to his chickens from time of hatching till saleable age.

5. An egg exhibit would certainly be of great educational value.

W. J. Bell, Angus.

1. I have noticed a marked improvement in the color of White and Barred Plymouth Rocks, also of White Wyandottes, and an equally marked improvement in size and shape of Black Minorcas and all varieties of Leghorns except Buff. All breeds with the exception of Turkeys and Geese show a slight improvement since I first judged for your department in 1903.

2. As all adult fowls are more or less in moult at fall exhibitions and all chicks are more or less immature very little can be done in preparing them for these fairs. However, many exhibitors pen their birds in very dirty coops, and where the Association does not furnish the coops they are frequently shown in boxes so small that the birds have to remain squatting all the time they are on exhibition. Further, these boxes are often nailed up with broad slats placed so close together that you can scarcely tell whether you are judging a Belgian Hare or a Peacock. When the exhibitor furnishes his own show coop it should always be large enough for the birds to stand upright in without touching the top, and correspondingly large otherwise in order that the judge may see the shape of the birds.

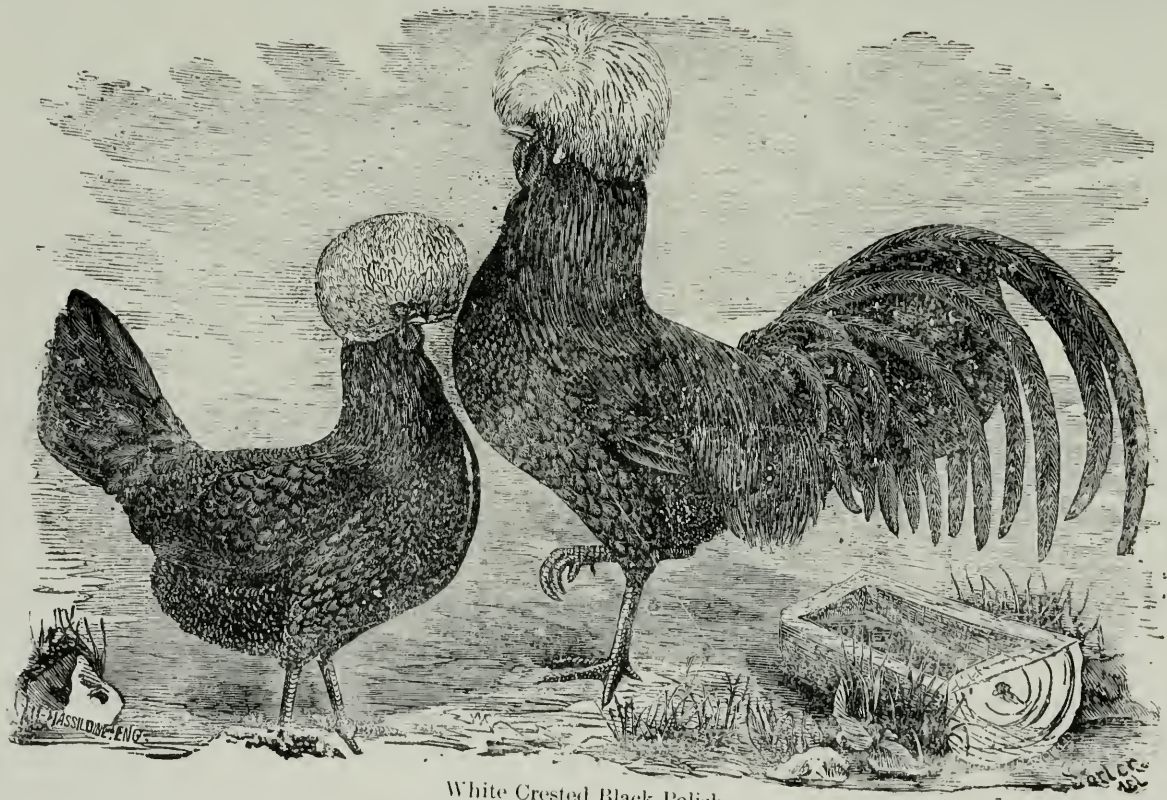
(*a*) Less varieties on the list and prizes increased accordingly, catering only to the leading varieties with the rare exception of bringing in one or two of the less popular kinds when they are raised extensively in that particular section. I have placed the awards at some fairs where the first prize offered for a pair of Adult Bronze Turkeys (usually weighing around 50 lbs. the pair) is only 50c. There is no inducement in that for a farmer to make a large enough coop to show in and lose the necessary time to place upon exhibition.

3. I consider egg production the most profitable end of the poultry business for the average farmer, and, on this account, would say that any of the Mediterranean Class are the best. This includes all varieties of Leghorns, Minorcas, Black Spanish and Andalusians. Turkeys, Geese and Ducks are the most profitable for flesh production and should be raised more extensively.

4. Breeding birds given sufficient range and exercise; a medium sized incubator used to supplement what broody hens can be procured. Colony coops used to confine hens when rearing the young, which should be placed on fresh ground each year. Bread soaked in milk the food for the first ten days, ground oats and shorts for two more weeks, then sound clean wheat substituted for the night meal. The more range for the young chicks the better.

5. If placed in with the poultry exhibit and fair prizes put on I think would add greatly to the attractiveness of the poultry display.

In closing I should like to impress strongly upon Directors of Fairs the necessity of closing the entries for poultry before any birds are placed upon exhibition and of appointing some one as superintendent of poultry who they know will be at his post when they arrive. When this is done the Secretary can hand the Superintendent a list giving the number of entries in each section and with this list the latter can mark off the correct space for each variety, and thereby get every breed by itself.



White Crested Black Polish.

As practised at present in 9 shows out of every 10, entries are taken right up till the judge commences his duties (sometimes afterwards). In consequence the superintendent never knows how much space to allow for a variety and the result is that the judge spends more time hunting up the birds that compete together than he does in the actual judging. It is far from an unusual occurrence to find a pair of one kind at the end of a long row of coops, a pair of the same birds in the centre and generally one or two of the same in another row some distance from the first. Anyone can readily understand how difficult it is to make correct awards under the circumstances, not to speak of the extra labor involved.

J. H. Minshall, Brantford.

1. I noticed a greater improvement at all the Fall Fairs where I judged than at the large exhibitions; the farmers, too, now know the points of the breed they show, and are anxious for information.

Barred Plymouth Rocks.

2. A uniform size exhibition coop. Some birds are shown in boxes with slats nailed on so that one can not see the birds and they are not able to stand up in the coop. A judge cannot judge properly in such cases.

(*a*) Show single birds as much as possible, and not too many varieties in one class. For country fairs give classes for all utility breeds, and place the ornamental in one class when prizes can only be offered for a limited number of varieties.

3. Rocks, Wyandottes, Minorcas and Leghorns are the best for the farmer. Change male birds every year, getting one not related to the hens. This will keep up the vigor and laying qualities of the flock.

4. Hatch the chicks under hens and have plenty of fresh air and free range, and do not feed too much sloppy feed to strong chicks. Forcing is not good for laying fowls.

5. I have not seen much interest shown in the egg exhibit, but it would be one of the best if breeders would regard the size and uniform color of eggs, as they would readily secure better prices.

R. E. McKinstry, Ottawa.

1. Yes, one cannot imagine the strides poultry have taken unless they have followed the shows. I have attended fairs for quite a number of years and I can safely say that birds that would be considered first-class ones four years ago would not be looked at to-day.

2. Show birds, if possible, when just about starting to lay; their condition is then nearly perfect. Wash all that are to be shown, no matter

Bronze Turkey Gobbler.

what color; if dirt is on a white it is on a black bird, and washing not only brings out the color but it loosens up the feathers. Birds should be cooped and judged, and each variety kept together at the exhibition.

(*a*) Where the entry in a class is over a certain number, increase the prize money.

3. Get your chicks hatched out early enough so that they will be full grown before the cold weather sets in.

Get rid of all hens two years and over.

Coop for winter in small numbers, say 10 to 12; they do much better than in larger lots.

Feed sparingly, but do not starve; make them work for all they get and at night give them good hard food and a good warm place to sleep in; they are then able to stand a lot of cold in the day time.

4. Barred Rocks, Orpingtons and Wyandottes.

5. I am in favour of an egg exhibit.

GEO. ROBERTSON, OTTAWA.

1. In some sections, I have noticed a marked improvement in the fowls exhibited, but there is still room for more in the majority of fowls shown at the Fall Fairs.

2. At some fairs by becoming a member of the association a person may enter as many birds as he wishes, without extra expense. This is a great mistake, as it tends to a very slovenly exhibit of cull stuff. In many cases farmers will not try to pick out their best birds to show, but bring along a dozen or more, crowded into a coop big enough for a couple, with the idea that the judge will perhaps get one that suits him in the lot. I would suggest that a small entry fee be charged for each individual and that the prize money be increased in proportion.

White Holland Turkey.

(*a*) I would suggest that prizes for the utility breeds be increased to as great an extent as possible.

3. Plymouth Rocks either White or Barred, Wyandottes, Orpingtons, Rhode Island Reds and birds of similar type are also very suitable. A great deal can be said in favour of the Leghorn type, but in my opinion nothing can surpass Plymouth Rocks.

4. I personally use the hopper system in connection with the old hand system of feeding chicks. Milk I consider a great help to growing fowl. I like a house with combined cotton and glass front. If ordinary attention is paid to cleanliness, and the birds are given an occasional mash, with a variety of grains scattered in a deep litter, with lots of clean water and grit before them at all times, and animal food fed regularly, there will be lots of eggs.

5. This is an exhibit that does not appeal very strongly to me. If it were properly conducted with prizes of sufficient value to bring out an entry that would make competition, it should be a good feature, but as it is conducted at present, it seems to me to be useless.

JAS. BAPTIE, SPRINGVILLE.

1. The improvement in quality and quantity of exhibits at the Agricultural Fairs has been very great during the last few years and at Winter Poultry Shows it now requires the best specimens to win, and also they must be in the best show condition.

2. It is very important that only one bird be placed in a coop, as high class ones are frequently injured when crowded together. The preparation of fowl for exhibition varies according to the season of the year.

Bronze Turkey hen.

One rule all should follow is that they be kept sheltered from the sun and wind during moulting, and it is better for them to be in a pen with as little light as possible, just enough so that they can see to eat, and the food they require depends on the color of the fowls. For instance, a white fowl that is fed on yellow corn or buckwheat will be ruined for show purposes as the plumage will have a yellow tinge, while a Golden Wyandotte will be improved in appearance on this feed.

(*a*) The smaller Fall Fairs should increase the number of varieties on their prize list, and also offer one dollar for 1st prize, and fifty cents for second and the Board of Directors should ask a poultry man to prepare the list for them.

3. Hatch chickens from eggs of hens that have been tested for laying qualities and that lay eggs of a good size. Hatch the chickens under hens (not in incubators). Raise them in colony coops scattered around the fields to insure a good constitution, without which you cannot have a good laying strain.

4. I consider the American class the best for farmers as they have more vitality. They include all varieties of Rocks, seven varieties of Wyandottes, Javas, Black and Mottled, and Rhode Island Reds.

5. I am not in favour of offering prizes for eggs.

Toulouse Gander.

T. H. Scott, St. Thomas.

1. There is a wonderful improvement in the quality of poultry exhibited at the Fairs and Winter Poultry Shows.

2. I find at a number of shows, birds are shown in small low coops or boxes, which do not allow them to stand erect. No one can judge them properly in such pens. Coops should be at least 22 inches square by 26 high. Farmers' birds often are very dirty, especially white ones, and should be washed. Turkeys and geese require much larger coops according to their size. Scaly legs are another bad feature, easily cured by a few applications of lard, sulphur and a few drops of carbolic acid.

(*a*) The utility fowls are deserving of more prize money than the ornamental. A bronze gobbler weighing 30 lbs. gets no more than a small bantam or pigeon. The express is much higher on the gobbler going to the show.

3. I prefer Wyandottes as an all round general purpose fowl; next Plymouth Rocks. Wyandotte hens will lay as well at 5 years old as a Rock at 2. Rocks get fat and break down behind; the Wyandotte rarely ever does. I have bred almost every variety, and find the Columbian Wyandotte the best all round general purpose fowl for market and laying.

4. If you want winter eggs, hatch the chicks in March, feed well and get them laying before winter. Feed wheat, oats and buckwheat (no

Embden Goose.

corn) with sugar beets daily, also beef scraps (no hot mashes) and no hot water, open your doors every day and give your birds plenty of fresh air and exercise, no artificial heat.

5. An exhibit should be encouraged, but the list calls sometimes for the largest and heaviest eggs, allowing exhibitors to put in double-yolk ones amongst the singles. It should read largest and most perfect, double-yolks barred.

I prefer to have exhibitors looking on while I am judging so that I can explain where one bird wins over another. It helps to educate the new beginner.

A. G. Jarvis, Westmount, Que.

1. I have seen a very great improvement in the different varieties of fowls during the last few years at the exhibitions where I have been called upon to judge, more particularly in the utility classes.

2. At some of the fall shows we often see birds in full moult and not in show condition, this is the case more particularly when shown by amateurs. The birds intended for exhibition purposes should be separated from the others—males from females—so as not to have feathers broken.

(*a*) I would offer more money for prizes in the utility classes, where we have the greatest competition, also in the water fowl and turkey classes. I mean by utility breeds-Wyandottes, Rocks, Rhode Island Reds, Leghorns and Minorcas.

3. I would have comfortable houses free from draughts, well ventilated, and open sheds for scratching pens. Fowls must have lots of fresh air and exercise, if we are to get good results in egg production. Plenty of vegetables in winter are essential and change of food. Do not feed too much corn to laying hens as it is too fattening.

4. If for egg production alone I would say Leghorns, Minorcas and Andalusians, but if meat and eggs are desired, Wyandottes and Rocks. The Rhode Island Reds are becoming very popular with some large breeders, but in my experience with them, I find they do not develop as quickly as the Rocks or Wyandottes, and they have less breast meat.

5. There would be no good derived from having an egg exhibit.

J. H. Warrington, Cornwall.

1. There has been a great improvement in nearly all varieties of poultry exhibited the last few years. Farmers are taking more interest, giving more care to housing and feeding poultry, and have at last awakened to the fact that there is money in fowls (especially when properly fed and housed) because for the capital invested and outlay of feed and care no animal on the farm can compare with them for profit.

2. More classes should be added to the prize lists of exhibitions. Many of the varieties that are termed ornamental yield splendid returns in eggs, Hamburgs and Polish, for instance, both being a great deal better layers than the average person gives them credit for.

3. For eggs Leghorns, Spanish, Minorcas, Andalusians and Hamburgs. For poultry for market, Indian Game and Dorkings crossed. For all round fowls, Dorkings and Javas. They are good fair layers in winter and good table fowls. Dorking chickens feather out very rapidly and, when well fed, kept dry and free from lice, grow very fast.

4. For winter eggs and breeders, the chicks should be hatched about the middle of May, fed about 5 times a day, and kept growing well. I give them no water until they are two or three weeks old, feed largely bread and milk, gradually giving them hard feed.

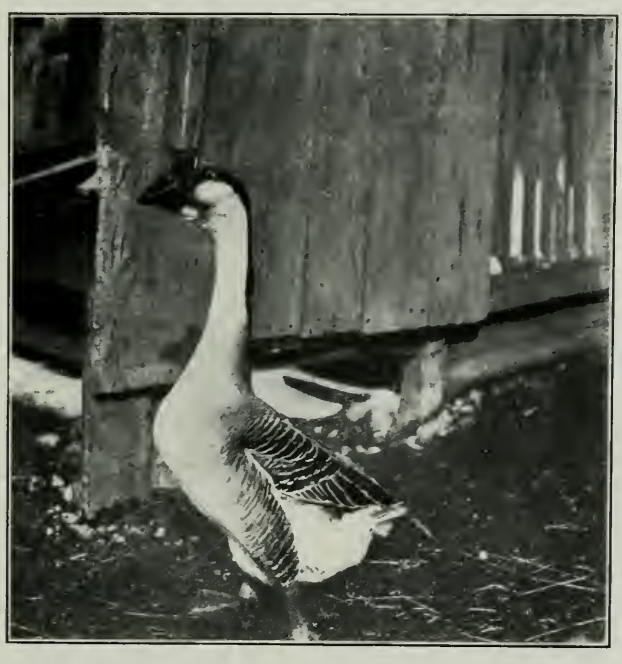
5. Does not amount to much. Our Ontario Government is helping the poultry industry very much by giving grants to the local poultry associations. These should be increased about 100 per cent. to each association. It would enable them to increase their classifications and possibly reduce their admission fees and get more people interested in poultry. Our Eastern Ontario and Ontario Fat Stock Shows are also greatly assisting the poultry industry, and their annual grants should also be increased.

R. J. Graveley, Cornwall.

1. There is a decided improvement in the quality of poultry shown. Farmers are paying a good deal more attention to thoroughbred stock and know more about it.

2. As a rule the poultry are shown in dirty coops, too crowded, several kinds mixed together, and little or no trouble is taken to clean them as they should be.

(*a*) Prizes should always be offered for individual birds, not pairs, and if the funds will allow it, also for old and young of both sexes.



African Gander.

3. Wyandottes, Rocks or Orpingtons, little difference as to color, that is a matter of preference; for eggs, exclusively, any of the Leghorns.

5 An egg exhibit is useful and instructive.

Directors should require that the exhibitors own the birds they show, and any one infringing this rule should forfeit all the prizes he has won, and not be allowed to show again for several years.

EXHIBITION POULTRY SHOULD BE PROPERLY HOUSED IN WINTER.

The keeping of poultry in as healthy a condition as possible during the long winter months, where the house has to be tightly closed to keep out the cold has always been a difficult matter, but some experiments at the Central Experimental Farm, Ottawa, during the past winter with a cotton front winter house would seem to be a step in the right direction. The house has its entire southern front made of cotton, instead of boards, with a window in the centre. In this way ventilation is secured without draughts, through the cotton, while the sunlight finds its way through the glass.

There is only one room in it, but sufficient floor space is left for the fowls to exercise. This portion of the house is made with an air space of 2 inches, while the other parts have only rough boards. The roosts are at the north side of the house, and in front of them is a cotton frame, which is suspended from the roof during the day, but is let down on cold nights to keep the birds comfortable, ventilation being secured through the cotton. To the side of the roosting space is a small pen for the males.

Rouen Drake and Duck.

The food given was as follows:—

Morning and evening, whole grain ration composed of ½ wheat, ½ oats, thrown in straw on floor. At noon every third day, dry mash composed of 1 pint ground corn, one pint ground barley, 1 pint ground oats, 1 pint shorts, cut bone, beets, given in a hopper.

Grit: Oyster shells (ground), in constant supply. Water supplied regularly. On very cold days snow was given.

The results of this experiment, which have been corroborated by other individual ones at Gravenhurst and in the Province of Alberta, are extremely encouraging, and, no doubt, further investigation will solve the question of a maximum egg production in winter at a minimum expense, as well as keeping fowls healthy and in good condition.

Conclusions.

During the coldest nights of winter none of the combs of the birds were frozen. This was doubtless owing to the protection of the cotton frame which was put down in front of the birds when the nights were cold. The birds were in good health during the winter. Their condition in spring time was excellent.

White African Guinea Fowl.

The fertility of their eggs in spring was convincing proof of the good health of the birds. On being tested, only 8 out of 70 eggs, which were put in an incubator on March 26th, were found to be unfertilized.

The number of eggs laid during the five winter months named were fairly satisfactory considering the low temperature frequently experienced and the non-stimulating, but wholesome rations given.

Another point worthy of note is the suitableness of the hopper system of feeding the dry mash during cold temperatures. Warm mashes would quickly have frozen, besides necessitating hot water (which means fire) and manipulation to mix them. Again, by the hopper and dry mash methods the birds had opportunity to take the mash when they felt inclined and each bird could get her full share.

NOTES.

1. Trim up your fair grounds, repair fences and gates, and have everything in readiness at least one day previous to the opening of your exhibition. Paint your main buildings and give your stables and pens a coat of whitewash outside and in. All weeds and long grass should be cut and burned. Intelligent boards of directors see that everything in connection with the grounds is well and attractively kept. This of itself is of educational value.

2. Rings for stock judging are absolutely necessary if judges are to do their best work. No matter how skilful a judge may be, if the stock he is judging is closely crowded by spectators, the results can never be entirely satisfactory. The expense of arranging for a suitable ring is not great.

3. A two days' fair has proved the most satisfactory for the average rural district, and, where possible, live stock should be on the grounds the afternoon of the first day, and the programme arranged to have judging commence at 10 a.m. of the second day. Before the judging of one class is completed, the next should be called out and at the ringside so as to prevent unnecessary delay. An official on horse back should be appointed for this work. Many societies find a megaphone advantageous.

Rouen Drake.

4. Sheep and hogs should always be unloaded, and for this purpose a simply made plank bridge should be provided by the Board.

5. Every society should have a number of coops for poultry of size sufficiently large so that the different varieties would not be cramped. Each breed should be kept together to facilitate judging and give opportunities for visitors to make comparisons.

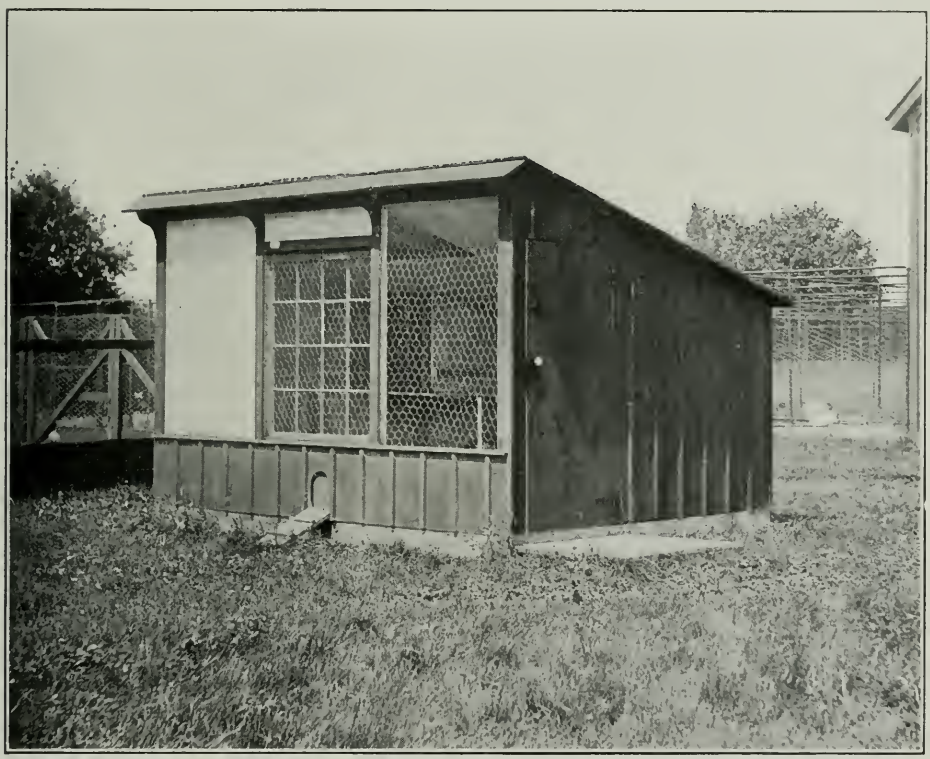
6. In the main building care should be taken to have exhibits attractively arranged. Manufacturers and merchants should be encouraged to show their goods, on condition that they are neatly displayed. Endeavor to have a large exhibit of flowers and potted plants. Prizes for these in rural districts should be largely increased.

7. Grain exhibits at exhibitions in the past have not been attractively arranged. Bags of different kinds, some of them not too clean, have been packed away in a dark corner, and exhibits put up in this way were not of any educational value. A good idea would be for directors to arrange to have a number of boxes made, which would hold about two bushels of grain, with a strip cut out of the front and a piece of glass about 3 or 4 inches wide put in a slide down the centre. This would give a good view of the grain, and make these important exhibits more attractive. If this could not be arranged for, a few sacks neatly stencilled with the name of the Society

could be used for displaying the grain at a cost of not more than four or five dollars.

8. The Standing Field Crop Competitions have met with the approval of the leading farmers of Ontario. In 1907 ten Agricultural Societies entered; this year nearly one hundred have signified their intention of taking part in this work. Fifty dollars in prizes are being offered by each of these one hundred societies, of which the Department of Agriculture pays thirty. Judges are supplied free by the Government of Ontario. Large prizes are being offered again this year at the Winter Fairs of Guelph and Ottawa, for the grain from prize winning fields in these competitions.

9. The Directors of the Canadian National Exhibition, Toronto, are offering $240.00 in prizes for a sheaf exhibit from the prize winning fields.



Canvas Front Poultry House. Canvas raised on one side.

The Central Canada Exhibition Directors, Ottawa, realizing the educational value of this work, are also offering large prizes for combined sheaf and grain exhibits open to all.

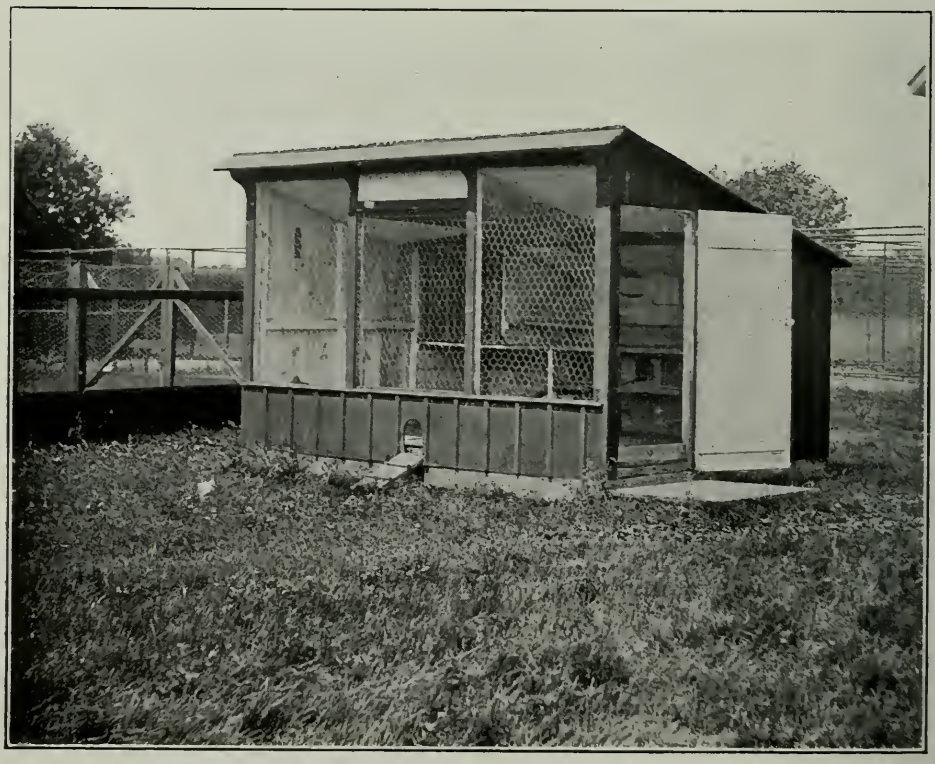
10. In order to encourage farmers' sons and daughters, whose parents are members of an Agricultural Society, it is recommended that local fair boards offer prizes for sheaf exhibits of the following classes of grain: Fall and Spring Wheat, Oats, Barley and Rye. These sheaves make an attractive exhibit in the main building, if neatly arranged.

11. Many Societies have arranged to allow school children into the grounds free, if accompanied by their teachers and in procession. In some societies those interested in educational matters offer prizes for the best drilled body of school children.

12. Directors should not fail to have a good musical programme. This is far preferable to a sideshow exhibition of questionable nature.

13. Where an exhibition has its headquarters, the citizens should, on Fair Day, endeavour to make their town as bright and attractive as possible.

Canvas drawn down.



House all open.

SCALE OF POINTS FOR FOWLS SUITABLE FOR THE AVERAGE FARMER.

	Possible Score.
A. General Appearance: 30 points.	
Estimated weight .....lbs.	6
Score according to age	
Form, long, moderately deep, broad, and low-set; top line and under line nearly straight	8
Quality, bone moderately fine and clean, feathers soft and glossy, skin fine; light in offal	8
Style, active and vigorous, but not restless; should show strong character	8
B. Head and Neck: 30 points.	
Bill, short, stout, broad at the base and well curved	7
Eyes, clear and bright	3
Face, short, clean cut appearance	2
Comb, of medium size and bright in color	3
Neck, moderate in length	4
Shoulders, broad and rather flat on top	4
Legs, straight and short, wide apart, strong; thigh, thick and well muscled	7
C. Body: 40 points.	
Breast, moderately deep and wide, full and round	15
Back, broad, of fair length and in some breeds a concave sweep to the tail	10
Keel, long, straight and well covered with flesh	15
Total	100

AMENDMENTS TO AGRICULTURAL SOCIETIES' ACT,

Passed in 1909.

Subsection (*g*) of section 7 is amended by adding thereto the following:

(iv.) Upon the recommendation of the Superintendent of Agricultural Societies, the Minister may authorize any society to elect six directors in addition to those already provided for.

Subsection (*d*) of section 21 is amended by striking out all the words after "600 members."

Notwithstanding anything contained in this Act, the society known as the Warren Agricultural Society is hereby declared to be a society under the said Act, and to have all the rights and privileges enjoyed by an agricultural society under the said Act.

Notwithstanding anything contained in this Act, the society known as the East Middlesex Agricultural Society shall be entitled to receive a grant of one dollar for every paid up member of the said Society on or before the first day of July, who is resident in the County of Middlesex and who is actually engaged in the business of farming, provided, however, that the grant so paid shall not exceed one hundred dollars.

Schedule B. is struck out and the following is put in place of the same:—

SCHEDULE "B."

(*Section 19.*)

AFFIDAVIT REQUIRED BY ACT RESPECTING AGRICULTURAL SOCIETIES, R. S. O. 1909.

Affidavit as to Membership and Payments for Agricultural Purposes.

County of }
To Wit: }

I, , of , treasurer of the Agricultural Society, make oath and say that during the year ending 31st day of December, 19 , the said Agricultural Society expended the sum of dollars, solely for agricultural purposes, in accordance with the Act, as set forth in the audited financial statement of the Society, and that no prizes for trials of speed, races or special attractions, and no prize money other than cash is included in the above amount, and that the number of members of the said Society for 19 is .

Treasurer.

Sworn before me this }
day of , 19 . }

Justice of the Peace for the County of
or a Commissioner in H.J.C.

EXPENDITURE FOR AGRICULTURAL PURPOSES.

	$	c.
Prizes paid, Horses, $ Cattle, $ Sheep, $ (Prizes for horses not to include trials of speed, or horse races)		
Prizes paid, Pigs, $ Poultry, $ Dairy Products, $		
" " Grain and Seeds, $		
" " Roots and other hoed crops, $		
" " Orchard and Garden products		
" " Implements and General Manufactures		
" " Fine Arts, $ Ladies' Work, $		
" " All other objects on Exhibition		
Money paid for prizes awarded in previous years		
" " " " at Plowing Match		
" " " " for Field Crop Competition*		
Meetings or Lectures for discussion of Agricultural Subjects		
Agricultural Periodicals		
Purchase of Live Stock, $		
Purchase of Seed and Plants, $		
Keep of Stock, $		
Expenses of Delegates to Fairs and Exhibitions' Convention		
Total Cash Expenditure for Agricultural Purposes		

*(Contributed by Society)

JUDGES SUPPLIED BY THE DEPARTMENT IN 1908.

Horses	67	Vegetables	4
Beef, cattle and sheep	31	Grain	2
Dairy cattle and swine	26	Dairy products	1
Poultry	15	For seed fairs	19
Ladies' work	11	For stallion shows	43
Fruit	3		
		Total	222

LIST OF DELEGATES TO CONVENTION.

Delegate.	Address.
Anderson, E. E.,	Dunnville.
Arnold, E. G.,	Listowel.
Alexander, Wm.,	Doe Lake.
Agnew, R.,	Meaford.
Arkell, W. H.,	Teeswater.
Anderson, Wm.,	Fergus.
Bailey, J. W.,	Tara.
Binning, W. E.,	Listowel.
Ball, Alfred,	Niagara-on-the-Lake.
Black, W. D.,	Parham.
Bowman, R.,	Humber.
Braden, And.,	Bobcaygeon.
Brown, W. C.,	Meadowvale.
Bernhardt, Geo ,	Galt.
Becker, C. W.,	London.
Brockbank, Jno ,	Paris.
Bemrose, J. J.,	Sault Ste. Marie.
Bemrose, J.,	"
Black, N. H.,	Rockwood.
Bolton, John,	Wildwood.
Brownlee, J. F.,	Ravenna.
Bushell, R. J.,	Williamsville.
Bowyer, W. A.,	Carholme.
Brown, J. F.,	Embro.
Brown, J. D. H.,	Sault Ste. Marie.
Barnett, James,	Mitchell.
Broderick, John,	Mitchell.
Burgess, W. J.,	Rockton.
Boughner, E.,	Simcoe.
Birdsall, M ,	Birdsall.
Birdsall, F.,	Birdsall.
Bright, John,	Myrtle.
Cooney, J.,	Brampton.
Chirpaw, W. J.,	Victoria Rd.
Christian, H.,	Shelburne.
Clark, J. S.,	Loyal.
Cowan, R. E.,	Galt.
Caister, E.,	Tavistock.
Cole, Geo.,	Sarnia.
Copeland, Nathan,	Cornwall.
Chappin, F.,	Ojibwa.
Collins, W.,	Peterborough.
Campbell, J. B.,	Pinkerton.
Clancy, Jno.,	Cargill.
Cooper, R.,	Welland.
Cole, John,	Brampton.
Currie, J. G ,	Ingersoll.
Crowley, Rev T J.,	Warren.
Cottrell, Geo.,	Sundridge.
Caskey, J A.,	Madoc.
Campbell, A. B.,	Berlin.
Channon, Wm ,	Oakwood.
Choate, Asa, N.	Glanford.
Choate, M., N.	Glanford.
Cockburn, J. A.,	Aberfoyle.
Cooper, E. E.,	Oshawa
Campbell, W. G.,	Comber.
Corey, Henry,	Beeton.
Douglas, Jas.,	Galt,
Duff, C. F. W.,	Cookstown.
Davidson, M. J.,	Lefroy.
Dickson, Thos.,	Atwood.
Doyle, Gus,	Sutherland.
Doupe, Amos,	Kirkton.
Dolson, H. A.,	Norval.
Devereaux, Allen,	Georgetown.
Dewart, E. R.,	Clinton.
Erskine, W. H.,	Markdale.
Eddy, Wilber,	Colborne.
Ewing, A. R.,	Waterford.
Evans, David,	Strathroy.
Ewing, P. S.,	Warkworth.
Easterbrooke, W. H.,	Freeman.
Ellis, J.,	Lindsay.
Egan, S. A.	Bolton.
Ferguson, T. A. M.,	Priceville.
Fuller, F. G.,	London.
Fleming, Wm.,	Paris.
Fitzsimmons, J. F.,	Rockport.
Farrell, John,	Forest.
Fry, W. A.,	Dunnville.
Ferris, J. B.,	Campbellford.
Farmer, Geo. H.,	Steelton.
Fletcher, R. J.,	Barrie.
Fargey, A. B.,	West Huntingdon.
Graham, A. C.,	Victoria Road.
Glendinning, John,	Vallentyne.
Gilbert, Morden,	Proton.
Gummer, G. A.,	Colborne.
Gainer, W. H.,	Welland.
Goring, A. H.,	Tavistock.
Grant, W. A.,	Becher.
Garvie, Alex.,	Kilsyth.
Garrock, A.,	Sheffield.
Gould, H. J.,	Uxbridge.
Gould, J. B ,	Markham.
Gibson, A. J.,	Caledonia.
Griffin, A. C.,	Waterdown.
Grierson, R. W.,	Oshawa
Grosch, J C.,	Milverton.
Gilmes, Neil,	Georgetown.
Huck, W. H.,	Mildmay.
Hesson, W. J.,	Sault Ste. Marie.
Hutchison, A.,	Mt. Forest.
Hickson, W.,	Bobcaygeon.
Henderson, J. M.,	Strathroy.
Houston, John,	Chatham.
Havers, H. P.,	Springfield.
Havers, R.,	Springfield.
Hunter, J. W.,	London.
Hawthorne, E.,	Warsaw.
Howe, H.,	Oxmead.
Henry, O. Z.,	Drayton.
Hoar, H. C ,	Hampton.
Hamilton, J. W.,	Millbrook.
Harvey, Robert,	Guelph.
Hudspeth, Jos.,	Caledonia.
Hammill, W. H.,	Beeton.
Hodge, Jesse W.,	Cornwall.
Holwell, F.,	Baden.
Hambly, C. W.,	Napanee.
Junkin, W. T.,	Fenelon Falls
Judd, F. C.,	Doe Lake.
Johnston, J. H.,	Fordwich.
Johnston, J. E.,	Tweed.
Jackson, T. W.,	Orono.
Keeling, G. L.,	Warren.
Kerr, And.,	Morriston.
Kerr, J. W.,	Morriston.
Kelly, Chas.,	Uxbridge.
Lee, Geo. E.,	Highgate.
Long, Geo.,	Ettrick.

List of Delegates to Convention.—*Continued.*

Delegate.	Address.
Laidlaw, Wm.,	Guelph.
Livingston, W.W.,	Tillsonburg.
Leary, R. H.,	Peterboro.
Limebeer, W. J.,	Caledon.
Marshall, Ed.,	Erin.
Moore, Wm.,	London.
Meldrum, G. J.,	Morriston.
Muxlow, Wm.,	Petrolea.
Marshall, R. H.,	Embro.
Mallory, W. J.,	Mallorytown.
Miller, Geo. L.,	Jarvis.
Mason, R. W.,	Jarvis.
Moorcraft, J. S.,	Bowmanville.
Murdoch, R. W.,	Cayuga.
Mabee. C. H.,	Tillsonburg.
Murphy, J. Thos.,	Simcoe.
McDougall, N.,	Tara.
McCharles, Jno.,	Ripley.
McArthur, C. A.,	Sarnia.
McRae, C. J.,	Beaverton.
McIntyre, W.,	Beaverton.
McKay, A. B.,	Lucknow.
McFarlane, T. J.,	Thorndale.
McGregor. Wm.,	Ardendale.
McDonald, Jas. A.,	Embro.
McFarlane, Alex.,	Otterville.
McFarlane, E.,	Otterville.
McKenzie, John,	Norwich.
McKay, J. M.,	Harriston.
McGuire, W.,	Waterford.
McGuire, M. W.,	Waterford.
McCowan, Alex.,	M.P.P., East Toronto.
McGillawee, A.,	Hampstead.
Nichol, Thos.,	Priceville.
Nix, C. H.,	Uxbridge.
Nunn, W. J.,	Lansdowne.
Naylor, Isaac,	Islay.
Owens, Geo.,	Antrim.
Osborne, D. A.,	Ardendale.
Orr, J. D.,	Meadowvale.
Pearson, H.,	Weston.
Peacock, J. H.,	Milton.
Petch, John T.,	Linwood.
Powers, J. T.,	Kirby.
Parson, Wm.,	Sarnia.
Pardy, Jno.,	S., Evelyn.
Purdow, H. B.,	Powassan.
Patterson, A. B.,	Norwood.
Potter, J. G.,	Pelham Centre.
Peart, H. S.,	Jordan Harbour.
Palmerston, N. S.,	Vittoria.
Quinlan, Dan'l.,	Barrie.
Ryder, Jos.,	Parry Sound.
Rosser, M. H.,	Denfield.
Roxburgh, Jno. E.,	Norwood.
Ross, D. K.,	Cookstown.
Robertson, Geo. S.,	Lucknow.
Roe, George,	Milverton.
Ritch, John,	Drayton
Russell, W. S.,	Tavistock.
Rattray, Geo. A.,	Wolfe Island.
Rickard, P. H.,	Crampton.
Raikes, Geo.,	Barrie.
Russell, A. J.,	Cobourg.
Sine, W. T.,	Sine.
Scarf, Wm.,	Durham.
Stephens, C. L.,	Orillia.
Simpson, Wm.,	Onondaga.
Salkeld, Isaac,	Goderich.
Stokes, R. A.,	Sombra.
Smith, Alex.,	Aberfoyle.
Sexsmith, W. W.,	Ridgeway.
Squire, S. W.,	Kilsyth.
Spear, Wm.,	Highgate.
Spotton, E. F.,	Fordwich.
Sheppard, J. W.,	Cayuga.
Smith, G. A.,	Uxbridge.
Sproule, Newton, H.,	Schomberg.
Smith, Wm.,	Columbus.
Telfer, T. S.,	Drumbo.
Templine, Geo. C.,	Fergus.
Thorn, Wm.,	Lynedoch.
Thompson, J. B.,	Ingersoll.
Thompson, J. E.,	Arnprior.
Verral. G. W.,	Weston.
VanSickle, A. W.,	Onondaga.
Vance, Robert,	Ida.
Wolf, W.,	Tara.
Watterworth, I.,	Glencoe.
Wright, Jos.,	Beeton.
Wickham, F. E.,	Walter's Falls.
Watson, R. J.,	Shelburne.
Weaver, W. W.,	Chatham.
Weber, L. K.,	Hawkesville.
Wyant, G. V.,	Petrolea.
Weeks, C. E.,	Woodville.
Weber, L.,	Dunnville.
Woolrich, Geo.,	Sault Ste. Marie.
Wickett, N. H.,	Caledonia.
West, E. C.,	Campbellford.
Watts, John,	Kingston.
Wright, L. J.,	Leamington.
Winslow, C. H.,	Millbrook.
Wright, Robert,	Massey.
Wood, Wm.,	Bradford.
Young, Jno. M.,	Harriston.
Young, Robert B.,	Erin.

COMPARATIVE STATEMENT OF GRANTS TO AGRICULTURAL SOCIETIES FOR 1908 AND 1909.

	1908	1909
ALGOMA :		
Central Algoma	$525 00	$510 00
Iron Bridge	65 00	53 00
Johnson & Aberdeen	75 00	82 00
North Shore	95 00	94 00
Bruce Mines	143 00	135 00
St. Joseph Isd	104 00	96 00
Thessalon	104 00	100 00
West Algoma	272 00	800 00
Emo	218 00	236 00
Oliver	232 00	281 00
Dryden	142 00	142 00
Massey	288 00	320 00
Kenora	168 00	.....
BRANT :		
Paris	414 00	433 00
Onondaga	164 00	156 00
South Brant	443 00	444 00
BRUCE :		
Paisley	300 00	308 00
Pinkerton	92 00	91 00
Huron Tp	220 00	218 00
Kincardine	82 00	79 00
N. Bruce & Saugeen	318 00	294 00
Wiarton	121 00	122 09
Arran & Tara	191 00	217 00
Underwood	141 00	141 00
Eastnor	84 00	90 00
Tiverton	107 00	112 00
Northern	199 00	191 00
Carrick	139 00	154 00
Teeswater	197 00	192 00
Lucknow	178 00	178 00
Chesley	167 00	181 00
CARLETON :		
Carleton Co	441 00	420 00
Fitzroy	138 00	139 00
Carp	296 00	271 00
March	57 00	.....
DUFFERIN :		
Dufferin	217 00	226 00
East Luther	196 00	185 00
Dufferin Central	254 00	262 00
DUNDAS :		
Dundas	235 00	203 00
Mountain	173 00	166 00
Winchester	231 00	222 00
DURHAM :		
Millbrook	410 00	439 00
Port Hope	217 00	222 00
West Durham	354 00	349 00
Cartwright	155 00	153 00
Orono	202 00	205 00
ELGIN :		
East Elgin	451 00	440 00
Straffordville	102 00	98 00
South Dorchester	161 00	162 00
West Elgin	375 00	401 00
Aldborough	207 00	214 00
Shedden	99 00	102 00
ESSEX :		
Essex Co	592 00	601 00
Comber	92 00	105 00
Amherstburg, Anderdon and Malden	155 00	153 00
Colchester South	219 00	209 00
ESSEX.—*Continued.*		
Mersea, Leamington & South Gosfield	$350 00	$338 00
FRONTENAC :		
Frontenac	218 00	206 00
Kingston Tp	97 00	118 00
Storrington	71 00	70 00
Wolfe Island	65 00	71 00
Parham	78 00	75 00
Kennebec	49 00	56 00
GLENGARRY :		
Glengarry	208 00	209 00
St. Lawrence Valley	264 00	255 00
Kenyon	177 00	171 00
GRENVILLE :		
South Grenville	315 00	332 00
Spencerville	118 00	113 00
Merrickville	216 00	214 00
Kemptville	198 00	203 00
GREY :		
East Grey	180 00	162 00
Priceville	104 00	112 00
Collingwood Tp	171 00	195 00
Rocklyn	142 00	145 00
Holland	80 00	83 00
Osprey	101 00	115 00
Proton	151 00	136 00
Owen Sound	360 00	344 00
Kilsyth	172 00	177 00
Keppel	65 00	70 00
Meaford & St. Vincent	132 00	137 00
Desboro	144 00	141 00
Sydenham	128 00	120 00
South Grey	170 00	206 00
Hanover, Bentinck & Brant	107 00	116 00
Egremont	137 00	139 00
Markdale	106 00	110 00
Normanby	96 00	95 00
Walter's Falls	143 00	144 00
HALDIMAND :		
Haldimand	273 00	252 00
Southern Branch	113 00	121 00
Caledonia	367 00	388 00
Walpole	158 00	176 00
Canboro	45 00	43 00
Dunnville	112 00	142 00
HALIBURTON :		
Deer Lake	64 00	.....
Haliburton	122 00	122 00
Glamorgan	42 00	37 00
Minden	150 00	138 00
HALTON :		
Halton	396 00	385 00
Esquesing	231 00	243 00
Nassagaweya	135 00	145 00
Nelson & Burlington	140 00	134 00
Trafalgar	284 00	291 00
HASTINGS :		
Stirling	215 00	195 00
Marmora	104 00	108 00
Wollaston	55 00	55 00
Belleville	286 00	313 00
Tweed	216 00	232 00
Shannonville	93 00	104 00
Madoc	231 00	228 00

COMPARATIVE STATEMENT OF GRANTS.—*Continued.*

Hastings.—*Continued.*	1908	1909
Bancroft	$149 00	$143 00
Maynooth	29 00	33 00
Frankford	303 00	301 00
Huron :		
East Huron	251 00	243 00
Howick	111 00	123 00
Blyth	198 00	161 00
South Huron	(Spring Fair only)	
Zurich	124 00	121 00
Bayfield	108 00	108 00
Exeter	213 00	199 00
Seaforth	184 00	213 00
West Huron	339 00	332 00
Dungannon	211 00	186 00
Turnberry	184 00	194 00
Kirkton	148 00	157 00
Kent :		
East Kent	238 00	243 00
Camden	128 00	127 00
Harwich	133 00	130 00
Howard	334 00	... ..
Orford	213 00	208 00
West Kent	372 00	382 00
Wallaceburg	111 00	119 00
Raleigh & Tilbury	237 00	227 00
Romney	76 00	81 00
Lambton :		
East Lambton	332 00	340 00
Bosanquet	129 00	131 00
Brooke & Alvinston	250 00	260 00
Florence	122 00	120 00
Plympton & Wyoming	136 00	138 00
West Lambton	524 00	447 00
Petrolea & Enniskillen	379 00	400 00
Moore	277 00	297 00
Sombra	116 00	134 00
Forest	209 00	220 00
Lanark :		
North Lanark	693 00	714 00
Dalhousie	180 00	195 00
Lanark Tp	264 00	263 00
Pakenham	148 00	148 00
South Lanark	387 00	387 00
Lanark Village & Bathurst	175 00	195 00
Maberly	95 00	98 00
Leeds :		
Lombardy	94 00	83 00
Frankville	182 00	192 00
Brockville	635 00	637 00
Delta	413 00	352 00
North Crosby	55 00	71 00
Lansdowne	184 00	174 00
Rear of Leeds and Lansdowne	95 00	101 00
Lennox & Addington :		
Lennox	340 00	340 00
Amherst Island	54 00	52 00
Ernestown	70 00	69 00
Addington	123 00	... ..
Centreville	84 00	81 00
Lincoln :		
Monck	111 00	99 00
Abingdon	109 00	101 00
Clinton Tp	166 00	151 00
Peninsular Central	74 00	76 00

Lincoln.—*Continued.*	1908	1909
Niagara Tp. and Town.	$212 00	$152 00
Manitoulin :		
Gore Bay	315 00	307 00
Manitowaning	148 00	150 00
Billings	125 00	132 00
Providence Bay	72 00	66 00
Howland	84 00	80 00
Middlesex :		
Dorchester	204 00	210 00
London Tp	201 00	170 00
Thorndale	170 00	164 00
Westminster	134 00	151 00
North Middlesex	215 00	203 00
McGillivray	48 00	47 00
Parkhill	155 00	140 00
Strathroy	554 00	565 00
Caradoc	118 00	135 00
Delaware	97 00	87 00
Mosa & Ekfrid	137 00	145 00
Muskoka :		
North Muskoka	325 00	312 00
Stephenson & Watt	187 00	191 00
Stisted	136 00	126 00
South Muskoka	585 00	594 00
Baysville	84 00	80 00
Medora & Wood	158 00	154 00
Morrison	81 00	81 00
Gravenhurst & Muskoka	217 00	231 00
Nipissing :		
Bonfield	117 00	97 00
Astorville	76 00	75 00
Sturgeon Falls	277 00	279 00
Caldwell	113 00	112 00
New Liskeard	295 00	273 00
East Nipissing	380 00	348 00
Warren	82 00	210 00
Norfolk :		
Norfolk Co	649 00	623 00
Courtland	89 00	91 00
Townsend	121 00	116 00
Windham	76 00	107 00
Charlotteville	174 00	180 00
Houghton	121 00	112 00
North Walsingham	124 00	127 00
Northumberland :		
Percy Tp	356 00	330 00
Brighton	122 00	137 00
Cramahe	243 00	223 00
Wooler	64 00	69 00
Seymour	179 00	202 00
Cobourg Central	367 00	370 00
Alnwich	148 00	148 00
Colborne	132 00	238 00
South Monaghan	74 00	76 00
Ontario :		
Ramona	34 00	32 00
Uxbridge	208 00	234 00
Brock	188 00	179 00
Scott	117 00	117 00
Port Perry, Reach and Scugog	51 00	70 00
Beaverton	109 00	118 00
South Ontario	333 00	332 00
Oxford :		
Woodstock	360 00	369 00

COMPARATIVE STATEMENT OF GRANTS.—*Continued.*

OXFORD—*Continued.*	1908	1909
Drumbo	$331 00	$330 00
East Nissouri	93 00	.....
West Zorra & Embro	165 00	151 00
Tavistock	207 00	223 00
Tillsonburg & Dereham	200 00	242 00
North Norwich	134 00	150 00
South Norwich	162 00	154 00
Ingersoll, N. & W. Oxford	113 00	122 00
PARRY SOUND:		
Armour Ryerson and Burk's Falls	489 00	471 00
Magnetewan	138 00	128 00
McMurrich	78 00	122 00
Machar	219 00	212 00
Perry	178 00	195 00
Strong	138 00	131 00
Powassan	264 00	257 00
Parry Sound	282 00	322 00
United Townships	108 00	105 00
Rosseau	124 00	123 00
McKellar Tp	160 00	154 00
Loring	130 00	94 00
PEEL:		
Albion & Bolton	218 00	200 00
Caledon	215 00	229 00
Peel	439 00	460 00
Toronto Tp	308 00	287 00
Toronto Gore	(Spring Fair only)	
PERTH:		
Stratford	220 00	.....
Elma	128 00	132 00
Listowel	194 00	196 00
Mornington	211 00	208 00
South Perth	235 00	215 00
Fullerton, Logan and Hibbert	216 00	210 00
PETERBOROUGH:		
East Peterborough	352 00	369 00
Galway	61 00	60 00
Otonabee	124 00	131 00
Peterborough Industrial	560 00	478 00
Lakehurst	44 00	42 00
Lakefield	101 00	100 00
PRESCOTT:		
Vankleek Hill	273 00	275 00
Alfred	131 00	129 00
South Plantagenet	123 00	119 00
PRINCE EDWARD:		
Prince Edward	428 00	405 00
Ameliasburgh	153 00	149 00
RENFREW:		
North Renfrew	398 00	415 00
Renfrew	479 00	512 00
Cobden	131 00	156 00
Eganville	46 00	45 00
RUSSELL:		
Russell Co	451 00	410 00
Casselman	51 00	57 00
Clarence	94 00	111 00
Russell Tp	207 00	.....
SIMCOE:		
Beeton	249 00	260 00
East Simcoe	234 00	233 00
Coldwater	189 00	.....
Oro	154 00	157 00
Tiny and Tay	161 00	168 00

SIMCOE—*Continued.*	1908	1909
Cookstown	$274 00	$273 00
Bradford and W. Gwillimbury	204 00	201 00
Alliston	222 00	218 00
Barrie	387 00	389 00
Elmvale	249 00	224 00
Nottawasaga	304 00	290 00
STORMONT:		
Cornwall	283 00	267 00
Stormont	161 00	143 00
Osnabruck	85 00	.....
Roxborough	98 00	105 00
Finch	80 00	80 00
VICTORIA:		
North Victoria	207 00	154 00
Fenelon	107 00	116 00
Eldon	164 00	145 00
South Victoria	540 00	608 00
Mariposa	133 00	133 00
Verulam	125 00	142 00
WATERLOO:		
Wellesley and N. Easthope	205 00	204 00
Elmira and Woolwich	187 00	187 00
South Waterloo	478 00	470 00
Wilmot	211 00	206 00
WELLAND:		
Fenwick	200 00	209 00
Wainfleet	80 00	84 00
Welland	233 00	261 00
Bertie	129 00	108 00
Stamford and Niagara Falls	200 00	165 00
Thorold Town and Tp.	124 00	116 00
WELLINGTON:		
Centre Wellington	377 00	352 00
Erin	295 00	303 00
West Garafraxa	63 00	69 00
Guelph and S. Wellington	800 00	800 00
Rockwood	183 00	179 00
Puslinch	188 00	190 00
W. Wellington	193 00	189 00
Arthur	177 00	161 00
Maryborough	95 00	97 00
Palmerston	109 00	112 00
Peel and Drayton	133 00	137 00
Mount Forest	212 00	241 00
WENTWORTH:		
Rockton	310 00	317 00
Waterdown	227 00	227 00
South Wentworth	189 00	164 00
Ancaster	239 00	200 00
Glanford	103 00	110 00
Binbrook	91 00	98 00
Saltfleet	103 00	.....
West Flamboro	122 00	164 00
YORK:		
Markham	800 00	800 00
Scarboro	318 00	317 00
Newmarket	592 00	560 00
Sutton	181 00	155 00
Queensville	111 00	127 00
Schomberg	282 00	265 00
Woodbridge	586 00	574 00
Weston, York and Etobicoke	246 00	221 00
Richmond Hill	190 00	175 00

GRANTS TO SPRING FAIRS, 1909.

Stallion Shows held in 1908, $517.

South Lanark	$50
Proton	29
Nottawasaga	50
Wellesley	32
Caledonia	45
Haldimand	19
Elmvale	42
Winchester	26
Renfrew	12
Woodstock	41
Carrick	50
Markdale	21
South Huron	50
Esquesing	50
	$517

Stallion Shows, 1909. $1,206.

South Waterloo	$37
Woodstock	48
Wellesley and North Easthope	36
Arthur	50
Southern Branch	13
Elmira and Woolwich	50
Walpole	8
Bosanquet	2
Guelph and S. Wellington	50
South Brant	50
Norfolk Co	18
Egremont	45
Halton Co	50
Barrie	50
Wilmot	50
Erin	50
Tavistock	42
Collingwood Tp	15
Carrick	50
East Luther	50
West Kent	50
Howick	35
Elmvale	40
Esquesing	47
Cornwall	12
West Wellington	50
South Victoria	50
Renfrew	14
Proton	29
East Grey	40
Peel Co	50
Dunnville	25
	$1,206

Stallion and Bull Shows, $832.

Paris	$46
Rocklyn	30
Tiverton	50
Palmerston	50
Arran and Tara	50
Meaford and St. Vincent	$26
Weston, York and Etobicoke	50
Toronto Gore	50
Listowel	47
Maryborough	26
Schomberg	35
South Huron	37
Blyth	37
N. Bruce and Saugeen	33
West Durham	40
Alliston	50
Nottawasaga	50
Elma	34
Seaforth	50
Fullarton, Logan and Hibbert	41
	$832

Seed Fairs, held in 1908, $29.

Carrick	$14
South Huron	15
	$29

Seed Fairs held in 1909, $204.

Richmond Hill	$15
Verulam	20
Renfrew	12
Fullarton, Logan and Hibbert	19
Mt. Forest	10
South Waterloo	18
Barrie	18
Meaford and St. Vincent	4
Listowel	10
Maryborough	8
Tavistock	14
Carrick	13
South Huron	12
Blyth	13
W. Wellington	18
	$204

Grants to Societies owning Pure Bred Stock, 1909, $1,800.

Oldcastle	$290
South Woodslee	470
Drummond	90
Osgoode	195
Dummer and Douro	290
Ops	70
Emily	110
Maberly	25
Oxford	50
Colchester N.	110
Verulam	40
Minden	20
Lanark Village & Bathurst	40
	$1,800

SPECIAL GRANTS.

	1908	1909
Indian Societies.		
Six Nations	$100	$100
Chippewa	75	75
Muncey Tecumseh	75	75
	$250	$250

GRANTS TO THE CANADIAN NATIONAL EXHIBITION, THE WESTERN FAIR AND THE CENTRAL CANADA EXHIBITION.

	1908	1909
Canadian National	$2,500	$2,500
Western Fair	1,254	1,309
Central Canada	1,246	1,191
	$5,000	$5,000

REPORTS OF STOCK SOCIETIES.

Society.	Receipts.					Expenditure.			
	Legislative grant.	Members' fees for 1908.	Municipal grant.	Sale of stock.	Total actual receipts.	Purchase of live stock.	Keep of stock.	Officers' salaries.	Total actual expenditure.
	$	$	$	$	$	$	$	$	$
Oldcastle	320	419	100	15	856	116	220	15	354
S. Woodslee	500	412	100	.....	1,034	317	151	35	538
Drummond	90	51	30	17	188	146	102	10	261
Osgoode	175	76	.....	25	277	143	90	.....	344
Dummer and Douro	300	109	.....	188	904	25	319	12	667
Ops	120	56	.....	.....	176	.....	101	20	190
Emily	90	68	.....	.....	162	65	89	15	182
Colchester North	.....	67	.....	.....	243	348	.....	.....	481
Kenora	168	86	.....	.....	254	200	.....	.....	212

Societies.	Receipts.					Expenditure.				
	Members' fees retained from 1907.	Members' fees paid in 1908.	Legislative grant.	Municipal grants and donations.	Total actual receipts.	Total prize money paid.	Special attractions.	Officers' salaries.	Total actual expenditure.	Value of land and buildings.
ALGOMA:	$	$	$	$	$	$	$	$	$	$
Central Algoma	64	214	525	362	1,845	853	176	75	2,018	9,150
Iron Bridge	15	33	65	.....	120	71	.....	7	97	.....
Johnson and Aberdeen	21	21	75	2	109	106	.....	5	120	.....
North Shore	36	14	95	11	200	153	.....	15	207	150
Bruce Mines	42	71	143	55	334	197	.....	27	274	.....
St. Joseph Island	25	23	104	16	181	143	.....	5	173	.....
Thessalon	36	35	104	80	400	173	.....	23	359	1,875
West Algoma	173	100	272	1,107	5,428	2,944	1,146	309	7,923	4,235
Emo	45	53	218	221	793	443	.....	70	645	800
Oliver	62	41	232	772	1,609	489	168	40	1,806	1,300
Dryden	36	55	142	33	416	281	.....	.....	633	.....
Massey	77	75	288	101	842	410	.....	35	995	350
BRANT:										
Paris	86	283	414	372	2,209	1,350	40	213	2,153	5,440
Onondaga	38	68	164	283	651	427	10	30	731	50
South Brant	75	248	443	450	2,611	1,267	14	175	2,320	3,100
BRUCE:										
Paisley	.....	146	300	160	1,331	924	485	100	1,835	.....
Pinkerton	50	62	92	100	398	270	32	25	366	300
Huron Tp	92	51	220	192	1,073	670	241	52	1,265	2,500
Kincardine	56	121	82	137	879	244	261	60	920	.....
N. Bruce and Saugeen	120	90	318	65	944	700	34	80	1,169	.....
Wiarton	.....	180	121	152	641	386	65	40	1,152	2,275
Arran and Tara	140	84	191	241	1,206	747	.....	55	1,134	1,370
Underwood	75	18	141	155	574	441	.....	32	565	250
Eastnor	62	40	84	128	550	302	.....	30	525	825
Tiverton	54	69	107	105	710	365	183	41	697	246
Northern	65	76	199	245	1,341	583	458	50	1,366	.....
Carrick	58	149	139	139	892	526	22	24	894	.....
Teeswater	97	40	197	139	1,039	576	83	45	946	1,250
Lucknow	92	47	178	217	1,036	582	18	50	914	1,300
Chesley	98	69	167	246	1,071	609	155	60	1,108	550

CARLETON:										
Carleton Co.	.....	782	441	500	2,799	1,429	491	100	2,790	5,100
Fitzroy	60	109	138	128	706	478	26	25	631	740
Carp	50	50	296	316	2,558	677	47	80	1,975	4,300
March	(No returns).									
DUFFERIN:										
Dufferin	87	210	217	357	1,496	777	119	150	1,495	3,865
East Luther	84	172	196	162	1,776	540	117	60	1,307	1,900
Dufferin Central	120	137	254	304	2,095	867	279	65	1,992	2,800
DUNDAS:										
Dundas	77	288	235	265	1,833	523	633	100	1,937	1,675
Mountain	86	218	173	68	1,277	494	243	50	1,125	550
Winchester	83	206	231	93	1,692	680	150	75	1,445	4,675
DURHAM:										
Millbrook	116	74	410	208	2,008	1,454	302	105	2,221	7,600
Port Hope	80	85	217	279	1,115	658	107	80	1,146	600
West Durham	122	86	354	283	3,311	1,073	167	100	2,979	1,300
Cartwright	72	129	155	51	806	454	120	30	802	.....
Orono	97	48	202	142	977	663	30	50	963	.....
ELGIN:										
East Elgin	110	1,173	451	685	5,071	1,302	1,450	179	5,196	650
Straffordville	5	130	102	45	468	282	15	30	402	500
South Dorchester	.....	230	161	75	871	473	91	50	844	.....
West Elgin	156	65	375	201	2,028	1,345	182	90	2,190	2,400
Aldborough	98	39	207	285	1,502	641	20	50	1,899	2,800
Shedden	60	29	99	140	408	332	15	30	474	120
ESSEX:										
Essex Co.	132	194	592	661	4,068	1,986	325	125	3,687	2,400
Comber	72	78	92	129	749	401	20	50	1,006	3,400
Amherstburg, Anderdon and Malden	63	115	155	250	867	515	61	40	846	2,500
Colchester South	91	86	219	100	1,086	612	50	50	928	3,450
Mersea, Leamington and S. Gosfield	161	490	350	720	3,269	1,011	695	50	3,053	7,450
FRONTENAC:										
Frontenac	55	16	218	122	657	527	.....	25	640	.....
Kingston Tp.	54	20	97	75	816	449	127	60	746	.....
Storrington	37	17	71	70	491	210	12	20	609	1,250
Wolfe Island	37	57	65	221	585	210	159	25	493	.....
Parham	43	37	78	85	451	227	54	21	449	650
Kennebec	34	24	49	50	183	207	.....	24	264	.....
GLENGARRY:										
Glengarry	68	81	208	120	1,274	721	115	99	1,464	.....
St. Lawrence Valley	129	97	264	163	1,445	793	50	.....	2,141	1,650
Kenyon	62	65	177	99	897	510	85	35	1,932	2,325
GRENVILLE:										
South Grenville	84	154	315	742	2,791	1,007	1,113	205	3,382	11,300

Societies.	Receipts.					Expenditure.				
	Members' fees retained from 1907.	Members' fees paid in 1908.	Legislative grant.	Municipal grants and donations.	Total actual receipts.	Total prize money paid.	Special attractions.	Officers' salaries.	Total actual expenditure.	Value of land and buildings.
GRENVILLE—*Continued.*	$	$	$	$	$	$	$	$	$	$
Spencerville	118	59	118	157	1,104	324	174	45	1,235	1,300
Merrickville	182	60	216	425	1,390	705	101	70	1,485	275
Kemptville	64	136	198	646	1,774	609	286	40	1,569	1,325
GREY:										
East Grey	83	33	180	106	742	430	52	50	789	1,820
Priceville	48	60	104	99	536	386	.....	30	593	360
Collingwood Tp.	77	137	171	237	843	555	30	30	879	75
Rocklyn	59	89	142	148	1,038	417	7	37	817	3,720
Holland	51	48	80	76	377	288	15	25	403	1,050
Osprey	67	36	101	76	803	403	104	35	817	580
Proton	67	252	151	180	1,401	442	88	62	1,915	3,350
Owen Sound	109	80	360	544	2,394	973	658	185	2,643	6,000
Kilsyth	70	117	172	128	826	563	.....	30	713	1,330
Keppel	41	40	65	70	370	213	25	30	403	75
Meaford and St. Vincent	56	178	132	85	2,608	427	125	35	2,874	9,525
Desboro	72	82	144	99	587	428	25	22	564	.....
Sydenham	61	85	128	164	528	307	.....	37	528	500
South Grey	80	61	170	334	1,145	1,084	133	60	1,612	4,400
Hanover, Bentinck and Brant	49	29	107	315	823	426	140	36	784	2,500
Egremont	66	72	137	154	1,003	456	26	28	908	1,910
Markdale	60	51	106	63	677	340	20	55	677	.....
Normanby	60	93	96	62	401	308	.....	29	474	.....
Walter's Falls	56	119	143	135	809	460	20	50	843	700
HALDIMAND:										
Haldimand	.....	248	273	157	1,426	610	335	110	1,487	2,700
Southern Branch	.....	169	113	79	735	400	35	25	645	65
Caledonia	81	204	367	203	3,368	1,291	625	183	3,502	4,735
Walpole	.....	218	158	260	1,132	637	54	65	1,108	545
Canboro	.....	58	45	40	227	139	22	10	195	300
Dunnville	.....	227	112	191	1,369	548	350	135	1,511	4,300

HALIBURTON:										
Deer Lake	16	14	64	.....	79	77	.....	10	113	.....
Haliburton	27	24	122	.....	186	179	.....	15	215	.....
Glamorgan	16	30	42	.....	86	54	.....	.....	63	240
Minden	31	20	150	.....	320	198	.....	15	339	320
HALTON:										
Halton	102	173	396	576	2,275	1,156	83	125	1,704	4,000
Esquesing	73	67	231	427	1,302	726	160	48	1,474	70
Nassagaweya	.....	88	135	273	738	425	.....	30	723	.....
Nelson and Burlington	56	121	140	226	637	426	15	40	766	30
Trafalgar	103	81	284	450	1,663	843	192	.....	1,654	500
HASTINGS:										
Stirling	96	64	215	60	950	502	97	60	900	750
Marmora	.....	116	104	168	894	375	121	55	934	1,500
Wollaston	28	52	55	14	151	203	.....	12	245	40
Belleville	73	91	286	544	2,019	812	463	125	2,030	.....
Tweed	109	115	216	82	1,383	749	145	40	1,344	.....
Shannonville	21	69	93	88	818	426	133	70	746	450
Madoc	177	41	231	142	1,201	613	124	75	1,343	.....
Bancroft	55	30	149	131	838	414	90	40	747	1,705
Maynooth	24	41	29	.....	111	125	.....	15	188	.....
Frankford	77	53	303	290	1,404	961	15	75	1,412	5,000
HURON:										
East Huron	91	50	251	143	1,296	651	91	50	1,072	5,700
Howick	53	45	111	55	619	447	1	35	628	500
Blyth	71	52	198	165	1,075	476	268	50	1,200	3,435
South Huron					Spring	Fair Only.				
Zurich	82	199	124	20	792	376	49	24	581	1,600
Bayfield	61	62	108	52	578	330	86	33	591	1,000
Exeter	.....	244	213	61	1,235	673	59	40	1,022	2,750
Seaforth	79	142	184	55	1,105	688	31	55	1,102	2,000
West Huron	91	215	339	336	2,285	705	844	90	2,445	.....
Dungannon	129	35	211	55	1,152	466	55	35	1,082	.....
Turnberry	88	110	184	59	905	601	126	50	1,199	915
Kirkton	46	257	148	134	904	507	98	40	895	1,900
KENT:										
East Kent	110	195	238	232	1,972	716	150	100	2,014	5,500
Camden	64	57	128	80	723	434	.....	35	845	2,150
Harwich	67	60	133	479	1,347	563	45	65	1,446	3,750
Howard	(Returns	incomplete).								
Orford	114	136	213	215	1,085	568	20	60	852	1,900
West Kent	78	140	372	1,082	3,668	1,088	477	300	4,200	12,000
Wallaceburg	50	37	111	362	1,103	389	155	45	924	3,470
Raleigh and Tilbury	62	161	237	170	993	337	115	25	1,990	2,075
Romney	47	152	76	100	706	369	62	50	626	2,135

REPORTS OF AGRICULTURAL SOCIETIES IN ONTARIO, SHOWING RECEIPTS AND EXPENDITURE FOR THE YEAR 1908.

Societies.	Receipts.					Expenditure.				
	Members' fees retained from 1907.	Members' fees paid in 1908.	Legislative grant.	Municipal grants and donations.	Total actual receipts.	Total prize money paid.	Special attractions.	Officers' salaries.	Total actual expenditure.	Value of land and buildings.
LAMBTON:	$	$	$	$	$	$	$	$	$	$
East Lambton	96	105	332	86	1 321	1,022	68	50	1,293	.....
Bosanquet	64	160	129	206	1,334	410	115	30	2,824	2,145
Brooke and Alvinston	128	83	250	156	1,711	848	23	60	1,255	3,300
Florence	72	46	122	125	504	308	.....	27	409	450
Plympton and Wyoming	50	92	136	115	669	460	.....	50	605	650
West Lambton	122	109	524	785	1,941	1,235	229	160	2,212	5,200
Petrolea and Enniskillen	139	100	379	425	2,087	1,124	150	100	2,057	3,200
Moore	63	258	277	200	1,538	845	183	54	1,526	.....
Sombra	84	55	116	143	753	464	.....	50	692	350
Forest	70	139	209	217	1,029	763	68	60	1,124	.....
LANARK:										
North Lanark	77	290	693	1,250	5,896	2,407	979	195	5,708	18,253
Dalhousie	51	156	180	30	1,036	373	5	35	1,008	1,580
Lanark Tp.	60	45	264	139	1,203	338	30	40	1,029	1,095
Pakenham	45	137	148	178	896	507	31	40	756	740
South Lanark	87	52	387	969	3,082	1,162	458	135	2,756	7,000
Lanark Village and Bathurst	68	91	175	305	1,176	675	79	105	1,264	285
Maberly	44	37	95	30	588	264	36	30	580	1,040
LEEDS:										
Lombardy	80	32	94	129	660	208	165	25	604	70
Frankville	176	40	182	195	1,117	622	206	55	1,065	935
Brockville	174	186	635	632	6,006	2,034	1,995	340	6,551	3,320
Delta	84	52	413	464	2,067	710	475	85	2,273	4,100
North Crosby	75	62	55	85	549	308	124	30	584	.....
Lansdowne	66	113	184	215	1,428	557	142	75	1,256	5,885
Rear of Leeds and Lansdowne	52	44	95	217	728	325	156	43	762	700
LENNOX AND ADDINGTON:										
Lennox	42	167	340	.....	1,430	1 079	25	100	1,616	2,800
Amherst Island	11	40	140	17	208	159	.....	10	183	.....
Ernestown	.....	102	70	94	492	244	.....	24	346	.....
Addington	(No returns).									
Centreville	50	71	84	138	340	241	.....	5	283	.....

LINCOLN :										
Monck	82	66	111	165	753	357	282	37	879	1,835
Abingdon	67	146	109	50	597	275	27	35	532	1,000
Clinton Tp	.....	181	166	200	1,009	457	192	65	902	2,665
Peninsular Central	.....	188	74	154	856	327	54	61	846	2,250
Niagara Town and Tp	36	54	212	252	640	420	29	40	628	300
MANITOULIN :										
Gore Bay	72	14	315	62	713	493	.....	65	664	2,000
Manitowaning	52	79	148	25	388	225	.....	40	331	650
Billings	48	16	125	64	302	230	.....	10	286	.....
Providence Bay	21	13	72	39	174	125	.....	12	213	500
Howland	50	12	84	25	175	116	.....	30	227	200
MIDDLESEX :										
Dorchester	.....	186	204	92	1,092	576	109	54	1,037	1,075
London Tp	60	135	201	50	605	300	83	25	576	485
Thorndale	.....	268	170	275	1,105	434	99	65	1,008	650
Westminster	.....	246	134	179	748	452	159	40	764	95
North Middlesex	79	73	215	132	1,012	516	68	75	980	475
McGillivray	32	37	48	30	323	161	.....	25	292	.....
Parkhill	66	66	155	150	877	382	151	35	888	2,200
Strathroy	93	147	554	330	3,560	1,664	937	100	3,510	8,100
Caradoc	36	373	118	75	841	484	37	33	808	1,000
Delaware	.....	186	97	144	459	254	69	25	455	.....
Mosa and Ekfrid	98	108	137	266	1,036	501	91	40	931	1,970
MUSKOKA :										
North Muskoka	71	41	325	96	953	468	20	40	914	3,200
Stephenson and Watt	45	32	237	53	501	297	.....	45	451	230
Stisted	35	24	136	8	211	179	.....	12	222	425
South Muskoka	100	34	585	185	1,425	948	55	60	1,355	950
Baysville	23	17	84	23	155	155	.....	5	179	10
Medora and Wood	46	29	158	57	318	246	.....	15	318	.....
Morrison	33	26	81	14	216	133	.....	16	265	750
Gravenhurst and Muskoka	49	72	217	69	234	353	69	50	864	410
NIPISSING :										
Bonfield	27	6	117	120	275	137	.....	27	304	1,290
Astorville	.....	18	76	96	190	86	.....	.....	190	.....
Sturgeon Falls	51	42	277	22	590	493	47	68	771	4,500
Caldwell	25	55	113	103	374	193	75	20	373	.....
New Liskeard	60	53	295	214	1,320	411	70	60	1,328	4,000
East Nipissing	43	28	380	8	611	495	6	70	672	1,050
Warren	.....	61	82	151	369	127	38	14	222	.....
NORFOLK :										
Norfolk Co.	.....	551	649	436	3,728	1,913	200	250	5,531	12,700
Courtland	.....	160	89	65	400	304	.....	30	404	.....
Townsend	.....	159	121	172	655	328	10	55	594	2,000

REPORTS OF AGRICULTURAL SOCIETIES IN ONTARIO, SHOWING RECEIPTS AND EXPENDITURE FOR THE YEAR 1908.

Societies.	Receipts.					Expenditure.				
	Members' fees retained from 1907.	Members' fees paid in 1908.	Legislative grant.	Municipal grants and donations.	Total actual receipts.	Total prize money paid.	Special attractions.	Officers' salaries.	Total actual expenditure.	Value of land and buildings.
	$	$	$	$	$	$	$	$	$	$
NORFOLK *Continued:*										
Windham	18	100	76	53	510	324	.....	25	504	350
Charlotteville	55	100	174	56	801	518	13	57	775	6,150
Houghton	.....	186	121	39	706	332	.....	35	648	1,200
North Walsingham	15	225	124	52	576	398	.....	42	551	200
NORTHUMBERLAND:										
Percy Tp	103	54	356	59	1,618	986	122	75	1,497	4,025
Brighton	60	43	122	180	977	536	160	50	984	36
Cramahe	72	50	243	124	930	589	30	30	841	1,050
Wooler	52	32	64	61	155	272	45	25	477	.....
Seymour	76	279	179	336	1,472	713	208	78	1,502	2,090
Cobourg Central	105	62	367	369	1,599	1,144	85	65	1,717	8,010
Alnwick	76	39	148	82	765	434	91	30	651	850
Colborne	80	122	132	219	1,115	804	140	55	1,150	800
South Monaghan	50	23	74	29	430	258	8	25	375	335
ONTARIO:										
Ramona	20	44	34	.....	163	99	.....	12	132	335
Uxbridge	60	100	208	318	1,801	749	747	115	2,205	.....
Brock	55	72	188	334	1,406	533	330	40	1,366	.....
Scott	39	84	117	133	648	373	.....	25	589	.....
Pt. Perry, Reach and Scugog	.....	246	51	30	389	301	.....	29	377	.....
Beaverton	47	118	109	149	765	402	76	32	777	.....
South Ontario	117	92	333	344	2,957	1,084	704	125	3,687	4,150
OXFORD:										
Woodstock	59	207	360	246	2,447	1,076	355	100	2,447	700
Drumbo	.....	211	331	159	1,691	1,054	.....	75	1,740	275
East Nissouri	(Returns	incomplete).								
West Zorra and Embro	.....	303	165	78	883	419	70	20	754	65
Tavistock	97	87	207	293	1,229	745	84	40	1,205	400
Tillsonburg and Dereham	.....	360	200	173	1,848	729	153	110	1,582	.....
North Norwich	.....	308	134	342	1,360	568	193	85	1,284	2,000
South Norwich	.....	225	162	60	776	534	110	40	906	300
Ingersoll, N. and W. Oxford	.....	144	113	219	1,047	433	201	60	982	.....

PARRY SOUND :										
Armour, Ryerson and Burk's Falls.	80	53	489	170	1,095	689	38	75	1,092	3,020
Magnetawan	37	7	138	11	227	170	.....	35	254	500
McMurrich	31	54	78	203	491	291	.....	10	482	1,000
Machar	40	9	219	156	471	291	42	25	451	1,580
Perry	46	86	178	88	516	306	.....	25	507	1,730
Strong	48	28	138	.....	354	203	10	15	326	675
Powassan	52	22	264	32	601	390	10	24	524	1,300
Parry Sound	72	74	282	280	1,365	684	85	25	1,493	5,600
United Townships	39	23	108	28	223	166	.....	15	223	.....
Rosseau	36	17	124	12	206	187	.....	20	271	43
McKellar Tp	51	24	160	34	511	249	16	15	601	1,600
Loring	32	35	130	10	244	166	.....	10	220	20
PEEL :										
Albion and Bolton	86	65	218	304	1,400	674	220	121	1,262	2,100
Caledon	89	88	215	483	1,260	676	125	65	1,158	650
Peel	87	319	439	534	2,944	1,569	275	280	3,049	4,900
Toronto Tp	110	108	308	390	1,664	792	153	50	1,605	2,720
Toronto Gore	8	75	.....	45	212	.....	.....	10	285	.....
PERTH :										
Stratford	.....	41	220	64	397	.....	.....	.....	128	.....
Elma	63	73	128	89	706	431	.....	62	773	1,300
Listowel	86	126	194	178	1,152	602	112	65	1,111	185
Mornington	80	347	211	107	1,490	626	169	79	1,471	2,300
South Perth	.....	221	235	361	1,551	611	205	130	1,484	3,250
Fullarton, Logan and Hibbert	94	128	216	185	1,199	624	39	65	1,234	1,050
PETERBOROUGH :										
East Peterborough	98	77	352	179	1,931	1,176	145	100	1,774	2,975
Galway	30	51	61	46	285	205	.....	25	279	.....
Otonabee	62	51	124	99	766	443	78	20	712	1,150
Peterborough Industrial	93	105	560	612	3,902	1,360	759	108	3,367	.....
Lakehurst	38	4	44	35	121	104	.....	7	146	135
Lakefield	70	72	101	101	774	359	36	25	604	2,100
PRESCOTT :										
Vankleek Hill	104	102	273	243	1,692	827	100	100	1,608	4,020
Alfred	92	67	131	35	845	397	90	40	840	2,800
South Plantagenet	.....	91	123	.....	498	370	.....	30	490	200
PRINCE EDWARD :										
Prince Edward	39	366	428	155	2,565	1,226	195	100	2,386	16,400
Ameliasburgh	81	38	158	.....	787	475	.....	62	654	.....
RENFREW :										
North Renfrew	98	270	398	354	2,138	1,398	42	100	2,189	19,000
Renfrew	101	379	479	687	4,339	1,696	450	125	4,625	12,875
Cobden	58	78	131	221	777	510	.....	50	737	1,550
Eganville	60	1	46	.....	163	.....	44	35	174	1,450

Societies.	Receipts.					Expenditure.				
	Members' fees retained from 1907.	Members' fees paid in 1908.	Legislative grant.	Municipal grants and donations.	Total actual receipts.	Total prize money paid.	Special attractions.	Officers' salaries.	Total actual expenditure.	Value of land and buildings.
	$	$	$	$	$	$	$	$	$	$
RUSSELL :										
Russell Co	101	84	451	825	2,210	1,054	24	85	1,979	6,600
Casselman	47	60	51	70	714	181	259	62	704	1,550
Clarence	50	28	94	93	529	408	30	25	566	1,140
Russell Tp	(Returns	incomplete).								
SIMCOE :										
Beeton	81	62	249	376	1,487	781	259	40	1,446	2,550
East Simcoe	87	126	234	306	2,022	748	302	156	2,095	9,250
Coldwater	(Returns	incomplete).								
Oro	104	179	154	.....	744	570	.....	40	774	.....
Tiny and Tay	56	129	161	321	1,062	557	124	125	1,080	.....
Cookstown	145	79	274	334	1,609	815	168	90	1,587	1,350
Bradford and W. Gwillimbury	98	100	204	117	1,320	625	183	70	1,277	2,100
Alliston	72	215	222	160	1,313	660	120	40	974	658
Barrie	130	150	387	524	2,730	1,186	460	185	2,728	250
Elmvale	84	54	249	197	1,908	602	103	112	2,959	4,425
Nottawasaga	109	164	304	55	2,748	1,018	389	213	3,016	.....
STORMONT :										
Cornwall	111	188	283	364	2,099	809	386	100	2,089	4,250
Stormont	.....	142	161	.....	677	450	20	20	775	.....
Osnabruck	(Returns	incomplete).								
Roxborough	.....	104	98	74	709	363	145	10	732	.....
Finch	50	38	80	.....	385	242	42	15	433	.....
VICTORIA :										
North Victoria	49	28	207	58	580	217	107	65	586	1,590
Fenelon	40	30	107	174	528	378	25	25	485	.....
Eldon	41	91	164	195	935	317	97	35	784	250
South Victoria	102	229	540	743	5,863	2,169	708	250	6,304	14,700
Mariposa	54	50	133	152	695	437	30	30	707	.....
Verulam	88	41	125	78	1,026	461	46	25	984	1,350
WATERLOO :										
Berlin	(No	returns).								
Wellesley and N. Easthope	82	105	205	151	885	639	.....	50	963	1,800

Elmira and Woolwich	85	75	187	333	1,563	488	72	45	1,143	3,500
South Waterloo	.....	249	478	863	2,326	1,456	65	150	2,253	1,200
Wilmot	96	58	211	310	1,249	662	20	100	1,212	400
WELLAND :										
Fenwick	57	178	200	117	1,487	788	318	80	1,472	3,825
Wainfleet	36	80	80	78	417	297	.....	25	332	170
Welland	41	261	233	475	2,526	925	65	80	1,794	2,500
Bertie	.....	138	129	.....	519	302	40	45	489	.....
Stamford and Niagara Falls	37	9	200	355	1,469	605	350	50	1,586	.....
Thorold, Town and Tp.	21	113	124	241	737	344	62	25	813	1,450
WELLINGTON :										
Centre Wellington	113	190	377	316	2,014	1,032	159	90	1,966	1,400
Erin	.....	352	295	201	2,200	991	49	60	1,720	1,800
West Garafraxa	43	108	63	79	431	320	.....	25	487	.....
Guelph and South Wellington	42	323	800	1,163	4,957	3,432	618	200	5,283	.....
Rockwood	.....	338	183	.....	1,003	495	34	40	1,263	1,100
Puslinch	.....	344	188	150	1,066	552	35	50	996	.....
West Wellington	106	52	193	292	1,116	517	30	80	1,099	2,050
Arthur	85	60	177	138	1,278	456	308	84	1,349	2,200
Maryborough	63	55	95	30	616	319	159	20	756	.....
Palmerston	60	61	109	125	819	373	108	.....	791	2,677
Peel and Drayton	89	107	133	153	1,221	445	212	60	1,239	.....
Mount Forest	143	146	212	248	1,527	933	159	60	1,611	250
WENTWORTH :										
Rockton	.....	376	310	460	2,037	985	211	125	1,916	.....
Waterdown	.....	406	227	145	1,100	657	45	40	1,101	40
South Wentworth	.....	119	189	289	663	367	62	75	741	.....
Ancaster	.....	196	239	342	1,360	460	218	100	1,246	4,380
Glanford	.....	118	103	193	452	348	33	30	518	100
Binbrook	.....	118	91	131	449	330	56	30	591	.....
West Flamboro	.....	186	122	423	1,051	520	53	60	1,017	127
YORK :										
Markham	193	209	800	1,828	5,910	2,569	546	250	7,222	18,120
Scarboro	61	96	318	964	1,714	1,004	30	100	1,602	55
Newmarket	130	805	592	373	4,447	1,545	898	225	4,406	6,750
Sutton	60	88	181	245	775	357	79	45	802	.....
Queensville	55	120	111	125	525	445	25	35	635	.....
Schomberg	96	57	282	301	1,674	778	143	50	1,270	400
Woodbridge	.....	606	586	343	3,025	1,630	326	200	2,987	5,950
Weston, York and Etobicoke	51	162	246	764	1,898	683	148	100	2,769	4,800
Richmond Hill	51	65	190	134	1,216	519	137	50	1,042	800
INDIAN SOCIETIES :										
Six Nations	38	193	100	63	2,071	653	264	55	1,973	1,886
Chippewa	36	14	75	125	264	75	42	15	198	.....
Muncey Tecumseh	22	21	75	90	489	199	92	.....	492	740

ANALYSIS OF PRIZE MONEY PAID BY AGRICULTURAL SOCIETIES IN ONTARIO IN 1908.

Societies.	Horses.	Cattle.	Sheep.	Swine.	Miscellaneous.	Total.
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
ALGOMA :						
Central Algoma	170 00	59 50		4 00	619 00	852 50
Iron Bridge	10 75	8 00	7 00	2 00	43 00	70 75
Johnson and Aberdeen	22 00	24 00	9 00	4 25	47 25	106 50
North Shore	17 75	22 50	11 25	10 75	91 00	153 25
Bruce Mines	56 50	18 50	13 25	4 00	105 15	197 40
St. Joseph Island	24 00	15 00	3 00		100 75	142 75
Thessalon	51 50	16 00	7 00	3 50	95 25	173 25
West Algoma	345 00	275 00		40 00	2,284 00	2,944 00
Emo	119 00	77 00	19 50	11 00	216 05	442 55
Oliver	97 00	90 00	12 50	23 00	266 00	488 50
Dryden	26 00	40 00	8 00	17 00	190 20	281 20
Massey	64 50	53 00	18 50	15 75	258 15	409 90
Kenora	(Stock Society.)					
BRANT :						
Paris	335 50	171 50	151 00	109 00	582 70	1,349 70
Onondaga	115 00	34 50	31 00	26 50	246 75	427 25
South Brant	367 00	169 00	172 00	119 00	440 25	1,267 25
BRUCE :						
Paisley	279 00	147 00	93 50	58 00	346 75	924 25
Pinkerton	78 25	36 25	18 00	12 00	125 50	270 00
Huron Tp	165 75	87 00	52 75	42 50	322 45	670 45
Kincardine	90 25	24 50	17 25	15 75	95 95	243 70
N. Bruce and Saugeen	344 00	31 00	64 00	41 50	219 75	700 25
Wiarton	84 00	61 75	31 50	12 50	196 45	386 20
Arran and Tara	340 00	80 00	52 00	24 50	250 25	746 75
Underwood	104 25	101 25	39 00	38 00	158 40	440 90
Eastnor	69 50	32 00	19 00	19 00	162 50	302 00
Tiverton	97 25	60 00	38 00	17 25	152 75	365 25
Northern	135 50	28 75	49 50	21 00	348 30	583 05
Carrick	135 00	92 50	54 00	37 50	206 75	525 75
Teeswater	166 75	87 00	26 00	23 00	273 50	576 25
Lucknow	163 00	85 00	4 00	21 00	309 00	582 00
Chesley	187 50	101 00	27 50	27 50	265 95	609 20
CARLETON :						
Carleton Co	301 00	212 00	144 00	87 00	685 00	1,429 00
Fitzroy	145 00	46 00	11 00	19 50	256 50	478 00
Carp	280 00	108 00	43 00	12 00	234 45	677 45
March	No Returns					
DUFFERIN :						
Dufferin	223 00	46 00	44 25	7 50	456 38	777 13
East Luther	195 50	69 00	42 00	11 25	222 75	540 50
Dufferin Central	258 00	130 00	65 00	31 00	383 00	867 00
DUNDAS :						
Dundas	147 35	47 25	14 00	21 00	293 50	523 10
Mountain	125 95	132 50	31 50	4 50	199 10	493 55
Winchester	270 00	102 50	48 75	22 00	237 00	680 25
DURHAM :						
Millbrook	473 50	260 00	92 00	101 00	527 50	1,454 00
Port Hope	126 50	174 50	81 00	27 00	249 40	658 40
West Durham	231 00	146 00	132 00	77 00	486 55	1,072 55
Cartwright	122 00	43 00	63 50	31 50	193 95	453 95
Orono	201 00	81 50	69 00	65 25	246 75	663 50
ELGIN :						
East Elgin	316 75	286 50	116 50	106 50	475 37	1,301 62
Straffordville	78 50	32 50	19 50	11 75	139 40	281 65
South Dorchester	120 50	51 25	13 00	12 00	276 35	473 10
West Elgin	484 00	300 00	125 00	75 00	360 55	1,344 55
Aldborough	156 75	125 75	89 50	27 25	242 05	641 30
Shedden	105 25	71 75	26 00	18 75	110 00	331 75

ANALYSIS OF PRIZE MONEY PAID BY AGRICULTURAL SOCIETIES.—*Continued.*

Societies.	Horses.	Cattle.	Sheep.	Swine.	Miscellaneous.	Total.
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
ESSEX :						
Essex Co	433 00	348 50	252 00	190 00	762 50	1,986 00
Comber	165 25	31 75	40 75	29 50	133 50	400 75
Amherstburg, Anderdon and Malden	174 50	72 50	55 50	23 75	188 90	515 15
Colchester South	127 00	109 50	81 80	43 75	249 95	612 00
Mersea, Leamington and S. Gosfield	167 50	86 50	215 00	102 50	439 60	1,011 10
FRONTENAC :						
Frontenac	196 00	62 50	31 50	48 00	189 25	527 25
Kingston Tp	91 00	70 50	33 00	35 00	219 25	448 75
Storrington	70 25	27 70	13 40	20 00	78 75	210 10
Wolfe Island	71 00	17 25	11 75	15 00	95 20	210 20
Parham	42 00	44 25	11 25	12 50	116 90	227 10
Kennebec	83 50	38 25	19 75	10 00	55 85	207 35
GLENGARRY :						
Glengarry	168 00	178 50	75 50	63 50	235 85	721 35
St. Lawrence Valley	240 50	161 50	53 00	42 50	295 95	793 45
Kenyon	150 00	81 75	38 00	44 50	196 05	510 30
GRENVILLE :						
South Grenville	233 00	175 50	62 50	32 00	503 75	1,006 75
Spencerville	54 00	48 50	9 00	12 00	200 73	324 23
Merrickville	280 50	124 50	21 75	30 20	248 40	705 35
Kemptville	204 50	82 25	47 75	37 25	237 20	608 95
GREY :						
East Grey	76 50	64 00	64 00	11 50	214 20	430 20
Priceville	80 50	45 50	51 00	9 50	199 65	386 15
Collingwood Tp	173 50	106 50	17 50	3 50	254 25	555 25
Rocklyn	116 00	102 00	43 50	20 00	135 50	417 00
Holland	106 50	43 25	14 00	12 75	111 00	287 50
Osprey	103 00	60 00	64 50	26 00	149 25	402 75
Proton	113 50	46 75	59 00	30 00	193 25	442 50
Owen Sound	314 75	165 50	95 00	97 00	300 85	973 10
Kilsyth	156 50	76 00	35 50	31 00	263 60	562 60
Keppel	35 75	15 75	15 50	10 50	135 70	213 20
Meaford and St. Vincent	114 00	42 00	16 25	22 50	231 75	426 50
Desboro	106 00	82 00	27 00	19 00	194 00	428 00
Sydenham	86 00	38 00	16 50	8 75	158 00	307 25
South Grey	94 00	61 00	70 00	19 00	839 70	1,083 70
Hanover, Bentinck and Brant	108 30	72 50	63 00	20 00	162 50	426 30
Egremont	151 50	69 50	31 00	20 00	184 25	456 25
Markdale	93 00	32 50	37 50	13 75	163 00	339 75
Normanby	53 25	38 25	26 25	8 75	181 20	307 70
Walter's Falls	162 00	86 00	33 00	18 00	161 25	460 25
HALDIMAND :						
Haldimand	141 50	70 00	89 00	24 00	286 00	610 50
Southern Branch	161 00	41 00	8 75	9 25	179 80	399 80
Caledonia	286 50	207 50	164 00	78 00	554 75	1,290 75
Walpole	270 00	89 50	59 00	42 50	176 20	637 25
Canboro	44 00	7 75	28 00	4 85	55 00	139 60
Dunnville	223 00	93 00	59 75	15 75	156 40	547 90
HALIBURTON :						
Deer Lake	19 78	8 67	2 10	2 10	44 29	76 94
Haliburton	31 25	12 75	15 00	9 50	111 05	179 55
Glamorgan	12 90	3 50	4 00	.....	33 10	53 50
Minden	35 50	19 50	18 00	.....	125 05	198 05
HALTON :						
Halton	343 00	151 00	126 50	31 00	504 45	1,155 95
Esquesing	245 00	77 00	73 00	28 00	303 00	726 00
Nassagaweya	141 50	41 00	51 00	6 00	185 25	424 75
Nelson and Burlington	193 00	63 00	27 50	8 00	134 23	425 73
Trafalgar	221 50	96 00	77 00	55 00	393 05	842 55

ANALYSIS OF PRIZE MONEY PAID BY AGRICULTURAL SOCIETIES.—*Continued.*

Societies.	Horses.	Cattle.	Sheep.	Swine.	Miscellaneous.	Total.
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
HASTINGS:						
Stirling	159 25	67 25	48 00	37 00	190 10	501 60
Marmora	106 25	65 50	7 75	14 00	181 65	375 15
Wollaston	44 75	29 35	26 75	12 15	90 13	203 13
Belleville	276 00	206 00	80 00	66 25	183 75	812 00
Tweed	173 00	212 05	39 00	36 50	288 55	748 70
Shannonville	140 20	95 00	40 00	39 25	111 85	426 30
Madoc	129 75	118 50	26 25	9 00	329 55	613 05
Bancroft	87 00	42 50	60 50	12 50	211 55	414 05
Maynooth	40 00	21 40	6 25	5 00	52 70	125 35
Dungannon and Faraday	No	Returns	.....	.....	.....	.....
Frankford	303 50	151 25	140 25	86 28	279 85	961 10
HURON:						
East Huron	153 50	108 75	35 75	29 00	324 40	651 40
Howick	123 00	72 50	27 25	30 00	194 05	446 80
Blyth	144 00	85 50	32 00	11 00	203 50	476 00
South Huron	Spring Fair Only.					
Zurich	125 50	55 50	9 50	17 50	167 75	375 75
Bayfield	80 50	40 75	30 50	19 00	159 50	320 25
Exeter	204 00	68 00	56 00	36 00	308 65	672 65
Seaforth	212 00	90 50	71 00	21 00	293 75	688 25
West Huron	151 50	102 00	63 00	24 50	363 80	704 80
Dungannon	151 50	55 75	40 50	27 00	191 50	466 25
Turnberry	213 50	43 50	28 50	25 00	291 00	601 50
Kirkton	167 00	66 50	52 50	26 50	194 25	506 75
KENT:						
East Kent	203 75	80 75	106 00	71 25	253 90	715 65
Camden	138 50	53 25	68 75	45 00	129 00	434 50
Harwich	156 50	71 50	64 50	45 00	225 80	563 30
Howard	Returns	incomplete		.....	.....	.....
Orford	154 75	91 75	65 75	43 50	212 05	567 80
West Kent	237 00	136 00	150 50	114 00	430 54	1,068 04
Wallaceburg	98 00	78 75	70 25	13 00	128 85	388 85
Raleigh and Tilbury	134 00	24 00	24 00	38 50	116 10	336 60
Romney	104 25	35 75	69 25	30 50	129 55	369 30
LAMBTON:						
East Lambton	160 00	250 50	110 50	65 00	436 66	1,022 66
Bosanquet	119 00	74 00	31 75	11 25	174 00	410 00
Brooke and Alvinston	265 00	143 00	71 25	35 25	333 90	848 40
Florence	60 75	37 75	56 75	30 00	123 10	308 35
Plympton and Wyoming	97 00	63 75	54 50	41 75	202 75	459 75
West Lambton	288 00	265 00	181 00	79 50	421 10	1,234 60
Petrolea and Enniskillen	250 50	299 50	179 00	62 00	333 20	1,124 20
Moore	206 50	208 75	83 25	75 75	270 80	845 05
Sombra	109 00	77 00	48 50	30 50	199 25	464 25
Forest	122 50	171 00	92 75	51 00	325 70	762 95
LANARK:						
North Lanark	925 73	240 75	84 12	129 50	1,026 53	2,406 63
Dalhousie	84 25	45 25	37 00	3 00	203 38	372 88
Lanark Township	79 50	53 75	30 00	7 50	167 05	337 80
Pakenham	192 00	57 00	17 50	4 50	236 25	507 25
South Lanark	385 75	242 75	38 75	49 75	444 90	1,161 90
Lanark Village and Bathurst	213 55	56 16	26 50	18 54	360 33	675 08
Maberly	37 50	37 50	13 25	.....	176 05	264 30
LEEDS:						
Lombardy	53 00	34 00	19 50	.....	101 91	208 41
Frankville	156 00	71 75	55 00	35 00	304 30	622 05
Brockville	356 00	323 00	125 50	143 00	1,086 25	2,033 75
Delta	138 87	173 50	66 50	58 00	273 25	710 12
North Crosby	111 50	47 25	12 00	10 00	126 50	307 75
Lansdowne	147 50	80 75	3 00	17 50	308 29	557 04
Rear of Leeds and Lansdowne	77 14	49 51	18 27	21 67	158 84	325 43

ANALYSIS OF PRIZE MONEY PAID BY AGRICULTURAL SOCIETIES.—*Continued*

Societies.	Horses.	Cattle.	Sheep.	Swine.	Miscellaneous.	Total.
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
LENNOX AND ADDINGTON :						
Lennox	292 00	160 50	74 00	36 00	516 05	1,078 55
Amherst Island	41 45	21 45	18 75	8 75	85 89	158 79
Ernestown	89 90	20 25	15 25	14 00	104 25	243 65
Addington	No	Returns	.....	.....	.....	.....
Centreville	112 00	41 50	19 00	17 00	51 05	240 55
LINCOLN :						
Monck	101 43	35 13	55 99	10 44	153 93	356 92
Abingdon	95 00	33 50	47 35	10 25	89 10	274 70
Clinton Township	115 00	41 25	31 00	9 50	260 55	457 30
Peninsular Central	154 20	2 50	36 75	10 75	122 90	327 10
Niagara Town and Township	111 00	.....	.....	.....	308 65	419 65
MANITOULIN :						
Gore Bay	102 00	75 75	40 00	26 50	248 75	493 00
Manitowaning	52 50	45 50	11 50	1 00	114 75	225 25
Billings	50 50	23 25	10 50	7 50	138 25	230 00
Providence Bay	19 75	8 25	14 50	5 50	76 75	124 75
Howland	27 50	5 00	6 00	1 50	76 50	116 50
MIDDLESEX :						
Dorches'er	204 00	163 00	69 25	10 00	130 00	576 25
London Township	178 00	41 50	28 00	5 50	47 00	300 00
Thorndale	139 25	115 00	28 25	17 00	135 00	434 50
Westminister	253 00	36 00	35 00	14 50	113 70	452 20
North Middlesex	198 55	58 50	29 50	14 00	215 90	516 45
McGillivray	58 75	26 50	16 00	2 00	57 25	160 50
Parkhill	138 00	67 50	34 50	9 50	132 25	381 75
Strathroy	385 00	419 00	176 25	72 75	611 00	1,664 00
Caradoc	163 00	63 75	28 00	.....	229 50	484 25
Delaware	43 25	36 00	44 75	11 75	118 70	254 45
Mosa and Ekfrid	168 00	75 00	54 00	24 50	179 85	501 35
MUSKOKA :						
North Muskoka	91 00	41 75	41 50	15 00	281 50	470 75
Stephenson and Watt	87 00	25 75	17 75	6 25	160 50	297 25
Stisted	39 50	20 25	17 75	1 25	99 75	178 50
South Muskoka	215 00	92 00	46 00	25 00	570 25	948 25
Baysville	37 00	17 50	14 00	2 50	84 35	155 35
Medora and Wood	55 50	38 50	9 50	6 00	136 75	246 25
Morrison	56 00	14 50	4 50	8 50	49 05	132 55
Gravenhurst and Muskoka	93 50	39 00	16 25	17 00	187 36	353 11
NIPISSING :						
Bonfield	23 50	16 25	4 50	3 50	89 70	137 45
Astorville	31 00	25 00	.....	4 00	26 00	86 00
Sturgeon Falls	197 00	69 00	31 00	30 75	164 80	492 55
Caldwell	44 00	42 50	8 00	12 00	87 00	193 50
New Liskeard	82 00	44 75	14 50	11 00	258 25	410 50
East Nipissing	89 00	111 50	33 00	28 00	233 95	495 45
Warren	39 00	30 00	8 00	6 00	43 75	126 75
NORFOLK :						
Norfolk Co	458 00	311 00	179 00	95 50	869 50	1,913 00
Courtland	59 25	49 55	19 75	17 50	157 50	303 55
Townsend	111 75	42 50	22 10	15 75	135 70	327 70
Windham	96 00	59 25	25 50	23 00	140 55	324 30
Charlotteville	130 50	67 25	54 25	38 50	227 23	517 73
Houghton	102 00	54 00	31 50	21 00	123 65	332 15
North Walsingham	112 25	64 50	38 75	25 50	147 50	398 50
NORTHUMBERLAND :						
Percy Tp	162 50	192 00	171 50	128 40	331 25	985 65
Brighton	166 00	100 00	79 00	48 00	143 10	536 10
Cramahe	145 40	126 25	92 10	52 25	173 47	589 47
Wooler	45 85	64 25	26 75	15 50	119 25	271 60
Seymour	263 00	99 25	61 25	39 75	249 60	712 85
Cobourg Central	191 50	279 05	80 00	40 50	551 75	1,142 80

ANALYSIS OF PRIZE MONEY PAID BY AGRICULTURAL SOCIETIES.—*Continued.*

Societies.	Horses.	Cattle.	Sheep.	Swine.	Miscellaneous.	Total.
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
NORTHUMBERLND.—*Continued.*						
Alnwick	146 50	43 25	56 50	23 50	164 70	434 45
Colborne	163 00	154 25	117 25	81 00	289 00	804 50
South Monaghan	97 75	27 45	14 50	10 75	107 00	257 75
ONTARIO :						
Ramona	40 50	9 00	2 40	3 50	43 40	98 90
Uxbridge	297 00	128 00	52 00	45 00	227 00	749 00
Brock	176 00	48 00	47 00	16 75	245 35	533 10
Scott	113 00	51 00	33 75	27 50	147 75	373 00
Port Perry, Reach and Scugog	186 00	.....	.....	.....	115 25	301 25
Beaverton	152 50	49 00	25 00	13 50	162 25	402 25
South Ontario	328 00	125 00	55 00	90 00	486 15	1,084 15
OXFORD :						
Woodstock	224 50	243 00	97 00	106 00	405 50	1,076 00
Drumbo	294 25	191 00	126 00	39 00	404 25	1,054 50
East Nissouri	Returns	incomplete		.....	.....	.....
West Zorra and Embro	149 00	41 00	16 00	42 00	170 50	418 50
Tavistock	330 00	59 00	34 00	43 00	279 00	745 00
Tillsonburg and Dereham	219 00	85 00	66 50	35 50	322 65	728 65
North Norwich	182 00	65 25	36 50	15 50	268 50	567 75
South Norwich	150 50	69 50	52 50	42 50	218 75	533 75
Ingersoll and W. Oxford	128 50	88 00	38 50	25 00	152 60	432 60
PARRY SOUND :						
Armour, Ryerson and Burk's Falls	152 00	90 00	74 00	9 50	364 50	689 50
Magnetawan	22 00	31 50	13 00	1 50	102 25	170 25
McMurrich	89 75	44 25	24 50	2 00	130 25	290 75
Machar	61 00	40 50	26 50	1 00	162 00	291 00
Perry	56 00	70 50	38 00	13 00	129 00	306 50
Strong	50 00	40 00	16 00	15 00	82 00	203 00
Powassan	77 50	67 00	40 00	12 00	194 00	390 50
Parry Sound	176 00	119 00	45 00	23 50	321 50	684 00
United Townships	31 00	20 50	15 50	1 75	97 50	166 25
Rosseau	41 50	22 50	7 00	.....	116 50	187 50
McKellar Tp	44 50	31 50	13 75	12 00	147 75	249 50
Loring	17 00	30 50	14 50	7 50	97 00	166 50
PEEL :						
Albion and Bolton	235 50	80 00	28 00	55 00	275 50	674 00
Caledon	202 60	90 00	40 00	20 00	323 54	676 04
Peel	507 00	145 00	94 00	42 50	781 00	1,569 50
Toronto Tp	226 40	85 25	58 00	27 00	395 84	792 55
Toronto Gore	Spring Fair only.					
PERTH :						
Stratford	Spring Fair only.					
Elma	100 00	43 50	40 50	26 00	220 75	430 75
Listowel	184 00	53 00	46 00	22 50	296 75	602 25
Mornington	194 00	85 00	29 00	34 00	283 75	625 75
South Perth	138 23	80 25	55 00	17 50	319 92	610 90
Fullarton, Logan and Hibbert	151 00	67 00	81 00	50 00	275 25	624 25
PETERBOROUGH :						
East Peterborough	223 50	311 50	148 75	62 50	429 50	1,175 75
Galway	29 00	25 25	18 00	.....	132 60	204 85
Otonabee	146 00	68 75	64 75	20 75	142 45	442 70
Peterborough Industrial	492 00	145 00	188 00	46 00	489 25	1,360 25
Lakehurst	33 50	9 75	75	1 25	58 55	103 80
Lakefield	150 00	24 50	32 25	17 00	135 05	358 80
PRESCOTT :						
Vankleek Hill	183 50	220 50	32 50	72 00	318 50	827 00
Alfred	126 25	75 50	25 50	21 00	148 80	397 05
South Plantagenet	160 00	121 00	8 00	9 50	71 75	370 25
PRINCE EDWARD :						
Prince Edward	345 00	166 00	176 00	68 00	470 55	1,225 55

ANALYSIS OF PRIZE MONEY PAID BY AGRICULTURAL SOCIETIES.—*Continued.*

Societies.	Horses.	Cattle.	Sheep.	Swine.	Miscellaneous.	Total.
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
PRINCE EDWARD—*Continued.*						
Ameliasburgh	120 25	51 00	19 50	17 50	267 20	475 45
Sophiasburgh	No Returns.					
RENFREW:						
North Renfrew	408 00	206 00	92 00	89 00	603 00	1,398 00
Renfrew	699 55	200 55	49 65	92 75	644 63	1,696 13
Cobden	155 00	65 00	45 00	40 00	205 55	510 55
Eganville	Returns incomplete.					
RUSSELL:						
Russell Co	362 35	265 77	113 75	74 93	234 57	1,054 37
Casselman	84 50	42 00	10 75	8 75	35 15	181 15
Clarence	115 50	125 25	32 00	14 50	121 25	408 50
Russell Tp	Returns incomplete.					
SIMCOE:						
Beeton	259 00	76 00	139 00	61 00	246 50	781 50
East Simcoe	134 00	119 50	72 00	29 00	393 25	747 75
Coldwater	Returns incomplete.					
Oro	215 00	84 00	30 00	36 55	204 35	569 90
Tiny and Tay	115 00	63 00	49 00	12 00	318 50	557 50
Cookstown	254 00	49 00	127 50	44 50	319 60	814 60
Bradford and W. Gwillimbury	180 00	47 00	74 00	22 00	302 50	625 50
Alliston	149 50	89 00	68 00	35 00	318 30	659 80
Barrie	357 00	84 00	136 00	59 00	550 75	1,186 75
Elmvale	143 00	59 00	40 00	20 00	340 50	602 50
Nottawasaga	295 00	35 50	54 00	47 00	587 00	1,018 50
STORMONT:						
Cornwall	171 50	142 75	37 50	28 50	429 00	809 25
Stormont	59 50	101 25	26 25	6 75	256 75	450 50
Osnabruck	Returns incomplete.					
Roxborough	88 75	99 50	13 50	11 50	149 40	352 65
Finch	65 00	21 75	4 75	4 00	146 55	242 05
VICTORIA:						
North Victoria	62 00	49 00	25 50	2 00	77 06	216 56
Fenelon	88 00	61 75	36 00	13 00	179 05	377 80
Eldon	140 50	17 00	39 65	11 50	108 75	317 40
South Victoria	755 25	459 50	238 00	147 00	569 50	2,169 25
Mariposa	149 00	58 50	35 50	24 50	169 15	436 65
Verulam	101 50	107 25	32 00	43 00	177 60	461 35
WATERLOO:						
Berlin	No Returns.					
Wellesley and N. Easthope	186 00	28 00	47 00	32 50	345 75	639 25
Elmira and Woolwich	153 50	83 00	38 00	28 00	185 25	487 75
South Waterloo	467 00	151 00	168 00	85 00	585 25	1,456 25
Wilmot	266 00	58 50	39 00	30 00	268 75	662 25
WELLAND:						
Fenwick	216 50	54 00	89 00	26 75	401 90	788 15
Wainfleet	91 15	45 25	37 00	9 00	114 60	297 00
Welland	369 00	74 00	43 00	24 00	414 65	924 65
Bertie	111 20	61 80	50 20	17 20	61 12	301 52
Stamford and Niagara Falls	186 50	131 50	55 40	14 50	216 95	604 85
Thorold Town and Tp	200 15	20 00	26 00	.....	98 24	344 39
WELLINGTON:						
Centre Wellington	287 00	158 00	66 50	37 00	483 50	1,032 00
Erin	298 50	165 00	104 50	22 00	401 25	991 25
West Garafraxa	132 00	55 00	15 20	9 50	108 25	319 95
Guelph and S. Wellington	884 00	218 00	202 50	107 25	2,019 94	3,431 69
Rockwood	153 00	44 00	41 50	19 00	237 50	495 00
Puslinch	175 25	47 50	66 00	22 00	241 25	552 00
W. Wellington	147 00	59 25	23 50	38 00	249 65	517 40
Arthur	127 00	68 50	40 50	13 00	206 70	455 70
Maryborough	115 50	37 00	14 00	11 00	141 25	318 75

ANALYSIS OF PRIZE MONEY PAID BY AGRICULTURAL SOCIETIES — *Continued.*

Societies.	Horses.	Cattle.	Sheep.	Swine.	Miscellaneous.	Total.
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
WELLINGTON.—*Continued.*						
Palmerston	145 10	41 00	27 00	17 00	142 60	373 10
Peel and Drayton	123 00	67 00	30 00	25 50	200 00	445 50
Mt. Forest	367 00	156 00	72 00	58 00	280 15	933 15
WENTWORTH :						
Rockton	316 00	87 50	70 00	47 00	465 00	985 50
Waterdown	200 00	108 00	38 50	26 00	284 90	657 40
South Wentworth	69 00	34 00	53 00	8 50	202 75	367 25
Ancaster	105 50	27 50	39 75	8 00	279 50	460 25
Glanford	79 75	54 75	32 00	10 50	171 10	348 10
Binbrook	128 50	49 00	24 50	9 25	118 75	330 10
West Flamboro	128 50	25 00	54 00	27 00	285 25	519 75
YORK :						
Markham	1,145 00	673 00	247 00	139 75	363 85	2,568 60
Scarboro	324 00	175 00	16 00	12 00	477 00	1,004 00
Newmarket	320 00	115 50	147 00	59 00	903 55	1,545 05
Sutton	172 50	42 00	49 00	21 00	72 50	357 00
Queensville	145 00	54 00	52 00	12 00	182 25	445 25
Schomberg	280 00	63 00	73 00	42 00	320 25	778 25
Woodbridge	449 00	98 50	177 00	52 00	853 75	1,630 25
Weston, York and Etobicoke	265 50	8 00	40 00	24 00	345 96	683 46
Richmond Hill	327 00	30 50	12 00	8 00	141 50	519 00
INDIAN SOCIETIES :						
Six Nations	86 78	98 63	23 53	20 03	416 48	653 35
Chippewa	20 00	18 75	.....	75	35 60	75 10
Muncey Tecumseh	45 95	20 10	.....	.....	132 80	198 85
CITIES :						
Canadian National	8,055 00	7,856 00	2,747 00	2,492 00	13,334 25	34,484 25
Western Fair	2,502 00	1,943 00	1,115 00	910 00	4,256 00	10,726 00
Central Canada	3,139 00	2,258 00	659 00	915 00	1,979 41	9,765 41

DATES OF FAIRS AND EXHIBITIONS, 1909.

Ancaster.....Sept. 28, 29.
Alexandria.....Sept. 28, 29.
Almonte.....Sept. 20, 23.
Alvinston.....Oct. 5, 6.
Alliston.....Oct. 7, 8.
Aylmer.....Sept. 6, 10.
Atwood.....Sept. 28, 29.
Aberfoyle.....Oct. 5.
Ashworth.....Sept. 30.
Arthur.....Sept. 22, 23.
Amherstburg.....Sept. 22, 23.
Acton.....Oct. 5, 6.
Astorville.....Sept. 28.
Bothwell's Corners.....Sept. 30, Oct. 1.
Bruce Mines.....Sept. 22.
Burk's Falls.....Sept. 23, 24.
Bowmanville.....Sept. 21, 22.
Brigden.....Oct. 5.
Beachburg.....Sept. 30, Oct. 1.
Bobcaygeon.....Sept. 29, 30.
Barrie.....Sept. 27, 28, 28.
Blackstock.....Sept. 28, 29.
Burford.....Oct. 5, 6.
Bracebridge.....Sept. 22, 23, 24.
Berwick.....Sept. 9, 19.
Bolton.....Oct. 4, 5.
Brockville.....Sept. 7, 8, 9.
Blenheim.....Oct. 6, 7.
Brampton.....Sept. 21, 22.
Burlington.....Sept. 30.
Baysville.....Sept. 29.
Brussels.....Sept. 30, Oct. 1.
Belwood.....Oct. 5, 6.
Beaverton.....Oct. 5, 6.
Brighton.....Sept. 22.
Bradford.....Oct. 19, 20.
Blyth.....Oct. 5, 6.
Binbrook.....Oct. 4, 5,
Beamsville.....Sept. 29, 30.
Carp.....Sept 30, Oct. 1.
Cayuga.....Sept. 28, 29.
Clarksburg.....Sept. 30, Oct. 1.
Cookstown.....Oct. 5, 6.
Cobden.....Sept. 23, 24.
Cobourg.....Sept. 22, 23.
Castleton.....Sept. 27, 28.
Comber.....Oct. 5, 6.
Collingwood.....Sept. 21-24.
Cornwall.....Sept. 9-11.
Colborne.....Oct. 5, 6.
Chatham.....Sept. 20-22.
Caledonia.....Oct. 7, 8.
Chatsworth.....Sept. 16, 17.
Campbellville.....Oct. 12.
Dresden.....Sept. 30, Oct. 1.
Dundalk.....Oct. 7, 8.
Drumbo.....Sept. 28, 29.
Delta.....Sept. 27, 28, 29.
Dunnville.....Sept. 21, 22.
Durham.....Sept. 21, 22.
Delaware.....Oct. 20.
Desboro.....Sept. 24, 25.
Drayton.....Oct. 5, 6.
Dorchester.....Oct. 6.
Elmira.....Sept. 28, 29.
Embro.....Oct. 7.
Erin.....Oct. 14, 15.
Emsdale.....Sept. 30.
Essex.....Sept. 29, 30.
Emo.....Sept. 16, 17.
Elmvale.....Oct. 4, 5, 6.
Florence.....Oct. 7, 8.
Fort Erie.....Sept. 28, 29.
Feversham.....Oct. 5, 6.
Flesherton.....Sept. 23, 24.
Fenwick.....Oct. 12, 13.
Freelton.....Oct. 6, 7.
Fergus.....Sept. 30, Oct. 1.
Fenelon Falls.....Oct. 6, 7.
Frankville.....Sept. 30, Oct. 1.
Forest.....Sept. 29, 30.
Gorrie.....Oct. 2.
Grand Valley.....Oct. 19, 20.
Gravenhurst.....Sept. 30. Oct. 1.
Guelph.....Sept. 14-16.
Gore Bay.....Sept. 27, 28.
Galt.....Sept. 21, 22.
Glencoe.....Sept. 28, 29.
Goderich.....Sept. 28, 29, 30.
Glanford.....Oct. 6.
Haliburton.....Sept. 30.
Holstein.....Sept. 28.
Huntsville.....Sept. 28, 29.
Highgate.....Oct. 8, 9.
Harrow.....Oct. 5, 6.
Hanover.....Oct. 5, 6.
Ingersoll.....Sept. 20, 21.
Ilderton.....Sept. 24.
Jarvis.....Oct. 5, 6.
Kagawong.....Sept 29.
Keene.....Oct. 5, 6.
Kilsythe.....Oct. 7, 8.
Kincardine.....Sept. 22, 23.
Kemble.....Sept. 28, 29.
Kemptville.....Sept. 22, 23.
Kirkton.....Sept. 30, Oct 1.
Kinmount.....Oct. 10, 11.
Kingston.....Sept. 22, 23.
Lambeth.....Oct. 5.
Lakefield.....Sept 28, 29.
Loring.....Oct. 1.
Lansdowne.....Sept. 22, 23.
Lindsay.....Sept. 23, 24, 25.
Lucknow.....Sept. 23, 24.
Listowel.....Sept. 21, 22.
Lanark.....Sept. 10.
Lombardy.....Sept. 4.
Lion's Head.....Sept. 29, 30.
Little Current.....Oct. 7.
Langton.....Oct. 9
Lyndhurst.....Sept. 21, 22.
London.....Sept. 10-18.
McDonald's Corners.....Sept. 23, 24.
Massey.....Oct. 5.
Manitowaning.....Sept. 30, Oct. 1.
Murillo.....Sept. 29.
Mt. Forest.....Sept. 21, 22.
Mattawa.....Sep. 23, 24.
Maberly.....Sept. 28, 29.
Middleville.....Oct. 1.
Metcalfe.....Sept. 20, 21.
Magnetawan.....Sept. 29, 30.

DATES OF FAIRS AND EXHIBITIONS.—*Continued.*

Madoc.....Sept. 13, 14.
Moorefield.....Sept. 30, Oct. 1.
Milverton.....Sept. 23, 24.
Merlin .....Sept. 30, Oct. 1.
Mt. Bridges.....Oct. 7.
Millbrook.....Sept. 30, Oct. 1.
Mildmay.....Sept. 27, 28.
Muncey .....Oct. 7, 8.
McKellar .....Sept. 28.
Merrickville .....Sept. 16, 17.
Meaford .....Sept. 23, 24.
Midland.....Sept. 22, 23.
Mitchell.....Sept. 15, 16.
Newmarket.....Sept. 29, 30, Oct. 1.
Norwich.....Sept. 21, 22.
New Liskeard.....Sept. 16, 17.
Newboro.....Sept. 4, 6.
Newington.....Sept. 21, 22.
New Hamburg.....Sept. 16, 17.
Norwood .....Oct. 12, 13.
Napanee.....Sept. 14, 15.
Niagara .....Sept. 22.
Orangeville .....Sept. 23, 24.
Ohswekin.....Sept. 29, 30, Oct. 1.
Oakwood .....Sept 27, 28.
Oshawa .....Sept. 14, 15.
Odessa.....Oct. 1.
Ottawa.....Sept. 10-18.
Onondaga .....Oct. 5.
Oro.....Sept. 21.
Owen Sound.....Sept. 14, 15, 16.
Otterville.....Oct. 7, 8.
Orono .....Sept. 16, 17.
Orillia.....Sept. 23, 24.
Priceville.....Oct. 7, 8.
Pt. Carling.....Sept. 22.
Powassan.....Sept. 28, 29.
Paris .....Sept. 23, 24.
Palmerston .....Sept. 28, 29.
Perth.....Sept. 1, 2, 3.
Parry Sound.....Sept. 29, 30, Oct. 1.
Petrolea .....Sept. 23, 24, 25.
Parkhill .....Oct. 5, 6.
Pinkerton .....Sept. 24.
Picton.....Sept. 22, 23.
Paisley.....Sept. 28, 29.
Pt. Elgin .....Sept. 30, Oct. 1.
Queensville.....Oct. 5, 6.
Rockwood .....Oct. 7, 8.
Rainham .....Sept. 22, 23.
Roblin's Mills. .....Oct. 1, 2.
Ramona.....Oct. 6.
Rodney.....Oct. 4, 5.
Rosseau .....Sept. 22.
Roseneath .....Oct. 1.
Renfrew.....Sept. 21, 22, 23.
Rockton .....Oct. 12, 13.
Richmond .....Sept. 27, 28, 29.
Rocklyn.....Oct. 7, 8.
Richard's Landing.....Sept. 25.

Straffordville.....Sept. 15.
Sarnia.....Sept. 27, 28, 29.
Spencerville .....Sept. 28, 29.
Sundridge .....Oct. 4, 5.
Sturgeon Falls .....Sept. 22, 23.
Shelburne .....Sept. 28, 29.
Sault Ste Marie.....Sept. 22, 23, 24.
Sprucedale .....Sept. 27, 28.
South Mountain.....Sept. 9, 10.
Smithville .....Sept. 23, 24.
Simcoe .....Oct. 12-14.
St. Mary's.....Sept. 22, 23.
Shannonville.....Sept. 25.
Stratford.....Sept. 28, 29.
Shedden.....Sept. 29.
Springfield.....Sept. 23, 24.
Streetsville.....Sept. 29.
Stirling.....Sept. 23, 24.
Strathroy.....Sept. 20, 21, 22.
Schomberg.....Oct. 14, 15.
Scarboro .....Sept 29.
Tara .....Oct. 5, 6.
Thedford.....Sept. 29.
Tavistock.....Sept 20, 21.
Tweed .....Sept. 29, 30.
Thamesville.....Oct. 4, 5, 6.
Tillsonburg.....Sept. 28, 29.
Tiverton.....Oct. 5
Thessalon .....Sept. 23
Teeswater.....Oct. 5, 6.
Thorndale.....Oct. 5.
Thorold .....Sept. 27, 28.
Toronto.....Aug. 30 to Sept 13.
Utterson.....Sept. 30, Oct 1.
Underwood.....Oct. 12.
Vankleek Hill .....Sept. 21-23.
Verner.....Sept. 20, 21.
Wyoming.....Oct. 1, 2.
Wellesley .....Sept. 14, 15.
Winchester .....Sept. 7, 8.
Warkworth.....Oct. 7, 8.
Wiarton .....Sept. 23, 24.
Waterdown.....Oct. 5.
Wallaceburg .....Oct. 13, 14.
Wallacetown.....Sept. 30, Oct. 1.
Wilkesport .....Sept. 30.
Walter's Falls.....Sept. 28, 29.
Williamstown .....Sept. 22, 23.
Weston.....Oct. 1, 2.
Walkerton.....Sept. 16, 17.
Watford .....Oct. 7, 8.
Walsh.....Oct. 15.
Wolfe Island .....Sept. 21, 22.
Woodbridge .....Oct. 12, 13.
Windham .....Oct. 6.
Woodville .....Sept. 16, 17.
Wingham.....Sept. 28, 29.
Welland.....Oct. 5, 6.
Woodstock .....Sept. 22-24.
Zephyr.....Oct. 13.

APPENDIX

TO

ANNUAL REPORT

OF THE

Agricultural Societies

OF THE

PROVINCE OF ONTARIO

1909

RESULTS OF COMPETITIONS IN STANDING FIELD CROPS AND PRIZE WINNING GRAIN AT WINTER FAIRS.

(PUBLISHED BY THE ONTARIO DEPARTMENT OF AGRICULTURE).

PRINTED BY ORDER OF

THE LEGISLATIVE ASSEMBLY OF ONTARIO

TORONTO
Printed by L. K. CAMERON, Printer to the King's Most Excellent Majesty
1910

Printed by
WILLIAM BRIGGS,
29-37 Richmond Street West.
TORONTO

APPENDIX TO REPORT OF AGRICULTURAL SOCIETIES, 1909.

Results of Competitions in Standing Field Crops and Prize-Winning Grain at Winter Fairs.

The increasing interest that is being taken in these competitions is shown by the fact that the number of Societies which entered in 1909 was 77, as against 47 the year previous, an increase of about 64 per cent. Other Societies, sufficient to bring the total to nearly 100, had made provisional entries, but the late, cold spring delayed seeding operations so much that they decided not to enter the competition till next year. Sixty-one societies made entries in oats, three in wheat, one in barley, peas and beans, five in corn and a similar number in potatoes. Twelve hundred farmers competed, with a total acreage judged of 20,000.

The reports of the judges show that there is considerable attention being paid by farmers to securing better and purer seed grain, and also to improved cultivation of the land and the eradication of weeds, especially on the part of those who had taken part in the two previous competitions, but there is much more to be done in this direction before perfection is reached. Farmers, generally, take little care in the securing of pure seed. In many of the fields judged, crops, otherwise fairly good, had points deducted from them on account of mixtures, not only of varieties of the same kind of grain, but of other kinds as well. Oats would have wheat and barley intermixed, and in one wheat section the judge reported much of it as only fit for local purposes on account of its being so mixed. In corn crops, too, there was a very noticeable lack of purity of seed, while potatoes, in some cases, were mixed. It cannot be too strongly insisted on that each variety of grain and potatoes be kept quite apart. In this way only can the best prices be realized for seed grain and roots, and the splendid prices obtained during the past two years for grain from the prize-winning fields in these competitions should be incentive enough to stir up every farmer to do his best to keep his seed grain, at least, free from all possibility of getting mixed.

Equally important is the separation of different varieties of potatoes. The careful housewife knows how satisfactory it is to purchase tubers all of the same cooking qualities and uniform size and will pass over mixed ones. The dealer to satisfy his customers is chary of purchasing any large quantities in districts where mixed potatoes are grown, and thus the growers suffer financially through this discrimination against their poorly-assorted tubers.

Very little treatment of seed grain and potatoes with fungicides and mixtures previous to sowing is reported. This is a line along which greater interest is desirable.

Weeds Most Commonly Found.

The alarming rate at which the perennial sow thistle is spreading over the Province calls for strenuous work on the part of farmers in combatting this subtle weed foe. Almost unknown a very few years ago, it is now found in more or less large patches in many sections of Ontario, both east and west, and unless steps are taken at once to check it, in a very short time it will be found everywhere. The

best plan of destroying it is by smothering. Pasture the land closely with cattle and sheep till about the middle or end of June, according to the season; then plough down, cultivate well and sow the plot with rape, buckwheat or millet. Rape in drills is especially good, as its rapid growth smothers the thistle faster than any other crop, and this process is helped by frequent cultivation. If the thistle is not destroyed the first season, repeat the smothering process the following year. Success has also been obtained by allowing the thistles to commence blooming, when the weed is devoting all its strength to producing seed; then plough carefully, making certain that all the thistle growth is turned down, cultivate thoroughly, manure the land and sow to one of the three crops mentioned above.

Stringent means should be promptly adopted by Municipal Councils to prevent the spread of this most noxious weed. A group of farmers in a locality may take every precaution in an endeavor to keep their farms free from this troublesome pest, but their efforts will be in vain if one farmer in the district allows this perennial sow thistle to go to seed, for every wind that blows scatters its seed over the land for miles.

Besides the perennial sow thistle, the judges found the following weeds: Ragweed, wild oats, mustard, couch grass, dock, Canada thistle, annual sow thistle, wild buckwheat, lamb's quarters, bladder campion, wild chicory, cockle, catchfly, bindweed, foxtail, camomile, wild tares, ox-eye daisy, pigweed, golden rod, mullein, yarrow, shepherd's purse, false flax, wild carrot, blue vervain, and numerous smaller and less noxious weeds.

Expert judges were sent out by the Ontario Department of Agriculture to judge the crops, and no charge was made to the societies for this work. In many sections these judges delivered short addresses and gave the farmers advice as to the destruction of weeds prevalent in these localities and the kind of grain best suited to the different districts.

One of the most interesting features at the Canadian National Exhibition was the magnificent display made by the Department of Agriculture with sheaves of grain from the prize-winners in the Standing Field Crop Competitions. It was a revelation to the many thousands, who constantly thronged the building to see the golden sheaves that were garnered by up-to-date Ontario farmers. One arch built completely of oats bore the motto, "Ontario's 100,000,000 bushel crop." On the main arch, which was made up of all the different kinds of grain grown on Ontario farms, was a printed banner with "Value of Ontario's Field Crops in 1908, $185,000,000." The statistical returns are now in for 1909 and Ontario's field crops are valued at $205,000,000, equal to the total combined crops of Manitoba, Saskatchewan and Alberta. These arches were 200 feet in length. Generous prizes were given by the Directors of the above Exhibition to the winners in this splendid exhibit. Never before in the history of the Dominion were the products of the fields so largely and so well displayed. At the Central Canada Fair a similar exhibit on a smaller scale was made.

As in 1908, two bushel sacks of grain from prize-winners in the Field Crop Competitions were shown at the Winter Fairs of Guelph and Ottawa, and for this purpose the Province was divided into two sections, east and west of Toronto. Those in the eastern part of the Province exhibited at Ottawa, and those in the western at Guelph. Upwards of 300 bushels of grain were exhibited at these fairs.

The prize-winning grain was retained by the Ontario Department of Agriculture for experimental purposes, in all about 70 bushels. This was distributed among the eleven agricultural representatives of the Department, with headquarters

at Morrisburg, Perth, Lindsay, Whitby, Galt, Essex, Simcoe, Collingwood, Norwood, Picton and Carp, and will be apportioned among farmers selected in these districts. The methods of cultivation of this grain will be supervised by these specialists and the farmer who receives it will be obliged to return a similar quantity in the fall to be utilized the following spring by other farmers in the different districts under similar supervision.

The grain which did not succeed in winning a prize in the keen competitions at Guelph and Ottawa was sold by public auction; good prices were realized and the money promptly forwarded to exhibitors.

It is admitted on every hand that the work of these Field Crop Competitions has resulted in untold benefit to all concerned and it is the desire of the Department that every Agricultural Society in the Province should take part therein.

RESULTS.

1. Increased production of pure seed.
2. Publicity given to names and addresses of farmers who have such seed for sale.
3. Increased prices obtained.
4. Improved cultivation of soil.
5. Better methods of weed destruction.

J. LOCKIE WILSON,

Superintendent.

RESULTS OF COMPETITIONS IN STANDING FIELD CROPS.

OATS.

Competitors in Order of Merit.	Name of variety.	*General appearance.	Freedom from weeds.	Freedom from smut, rust, blight and insects.	Freedom from other varieties and other kinds of grain.	†Yield and quality of grain.	Totals of scores.
ALGOMA.		(20)	(25)	(10)	(20)	(25)	(100)
CENTRAL ALGOMA SOCIETY. *Judge—H. S. Peart, Jordan Harbour.*							
W. G. Alderson, Sault Ste. Marie.	20th Century ...	17½	22	7	17	20½	84
Jno. Neff, Sault Ste. Marie.....	do ...	17	20	7	17	21	82
Wm. McKee, Roundwood.....	Sensation.....	15	22	7	17	20	81
Geo. H. Farmer, Steelton.....	Abundance	15	15	9	19	22	80
H. Marshall, Sault Ste. Marie...	do	16½	17	7	16	22	78½
Conrad Becker, Sault Ste. Marie.	do	15½	20	7	16	19½	78
Thos. Avery, Korah.....	Siberian	12½	19	8	15	15	69½
Frank McKee, Roundwood.....	Banner	17	20	8	10	13	68
Chas. Penno, Sault Ste. Marie...	Storm King	12	15	6½	16	17	66½
C. W. Egglesfield, Sault Ste. Marie	Banner	11	15	5	12	19	62
DRYDEN AGR. SOCIETY. *Judge—H. S. Peart, Jordan Harbour.*							
B. Brignal, Oxdrift.....	Storm King	17	23	7	18	21	86
Jno. A. Crerar, Oxdrift.....	Abundance	16½	23	8	18	20	85½
Paul Kennedy, Dryden.....	Bumper King ..	17	18	8½	19	22	84½
Alex. Skeene, Dryden.....	Banner	16½	22½	7	18	20	84
Anderson Bros., Oxdrift.....	do	17½	23	6	16	21	83½
John Adams do	do	15¾	22	8	17½	20	83¼
W. J. Robinson do	do	16	22	8	16	20½	82½
Robt. Latimer do	Siberian	15¼	20	7	16	22	80¼
Jas. Latimer do	Banner	17	20	7	16	20	80
John Latimer, Dryden	Siberian	14	23	5	18	20	80
John Hutchison do	.....	14	20	8	14	19	75
E. W. Wice do	.....	14½	18	4	17	19	72½
Thos. Turner, Oxdrift.....	Banner	13	19	5	16	19	72
BRANT.							
PARIS AGR. SOCIETY. *Judge—T. W. Lennox, Barrie.*							
John Doyle, Paris Station.....	Abundance	17	25	9	20	23	94
Alexander Hall, Ayr.....	American Banner	17½	24	9½	20	22	93
E. Barker & Son, Paris.....	Prince Royal ...	18½	23	9	18	23	91½
Robt. Cochrane, Ayr.....	White Irish	17½	23½	9½	18	22½	91
Wm. Richmond, Ayr.....	do	16½	23½	9½	18	23	90½
Wm. Guthrie, Paris Station.....	Banner	16½	23	9¼	18	22½	89¼
David Patton, Paris Station....	Scottish Chief...	16½	23	9	17	23½	89
Fred. Tuck, Brantford.....	American Banner	17	24¾	8	18	20½	88¼
Wm. McRuer, Ayr.....	Banner	17	23	8½	17½	22	88
Thos. Newton, Paris Station....	Prince Royal ...	14½	21	9½	17	20½	82½

* General appearance—Considering stand of crop, type of plant, vigor and uniformity of growth, method of seeding and absence of lodging.

† Yield and quality of grain—Considering proportion of well-filled heads of plump grain of good quality and uniformity of maturity.

NOTE.—The figures in parenthesis at the top of the table are the maximum scores.

RESULTS OF COMPETITIONS IN STANDING FIELD CROPS.—*Con.*

OATS.

Competitors in Order of Merit.	Name of variety.	General appearance.	Freedom from weeds.	Freedom from smut, rust, blight and insects.	Freedom from other varieties and other kinds of grain.	Yield and quality of grain.	Totals of scores.
BRANT.—*Continued.*		(20)	(25)	(10)	(20)	(25)	(100)
SIX NATIONS AGR. SOCIETY. *Judge—Simpson Rennie, Toronto.*							
Chancey Garlow, Ohswekin	Oats	17½	22	8	14	20	81½
Geo. E. Curley, Ohswekin	do	12½	18	8	15	17½	71
Arch. Russell, Hagersville	do	15	18	5	16	15½	69½
Jacob Bomberry, Ohswekin	do	12	18	8	16	14	68
David Fish, Newport	do	13	14	6	15	16½	64½
H. G. Garlow, Ohswekin	do	13	11	7	16	17	64
Geo. E. Powless, Tuscarora	do	12½	13	8½	16	13½	63½
Jno. Burning, Ohswekin	do	11	12	8	17	15	63
Geo. P. Hill, Ohswekin	do	12	11½	7	16	12	58½
Wm. Smith, Burtch	do	9	13	5	17	10	54
A. Jamieson, Ohswekin	do	12	12	5	11	12½	52½
Alex. H. Lottridge, Ohswekin	do	10	12	7	13	9	51
Wm. Smith, Jr., Burtch	do	8	11	5	17	10	51
Wm. H. Jamieson, Ohswekin	do	10	4	6	10	11	41
SOUTH BRANT AGR. SOCIETY. *Judge—M. W. Sexsmith, Ridgeway.*							
T. W. Smith, Scotland	Black Oats	19	20	8	18	25	90
H. A. Lester, Burford	Bumper King	17	22	10	20	20½	89½
A. D. C. Luard do	Ligowa	17½	22	9½	18	22	89
J. H. Wooley do	20th Century	17	24	8	18	21½	88½
D. J. Standing do	Siberian	15	24	8	19	20	86
J. E. Brethour do	White	17	24	7	14	21	83
W. H. Metcalfe do	New Irish White	13	23	10	18	17	81
D. R. Hamilton do	American Banner	14	24	7	19	16	80
C. Hodgson, Brantford	Dodd's Early	14	22	9	18	17	80
J. G. Hanmer, Brantford	do	14	22½	9	17	17	79½
Wm. Creighton, Burford	White	13	20	9	15	22	79
L. E. Parnell do	20th Century	12	22	9	18	16	77
E. F. Park do	Banner	13	20	8	12	21	74
BRUCE.							
ARRAN & TARA AGR. SOCIETY. *Judge—H. B. Jeffs, Bond Head.*							
A. Crow, Tara	White Mammoth.	15	24	9	18	23	89
J. Thompson & Son, Dobbington	Danish	15½	22	9	19	22½	88
Thos. Tippins, Tara	King Edward	13	23	8	18	21	83
J. Black, Jr., Kilsyth	Manitoba	13	22	10	18	19	82
J. Gowan, Allanford	Sheffield Standard	13½	25	8	19	16	81½
Wm. Tippins, Arkwright	Canadian Pride	13	20	9	18	20	80
W. T. Wolfe, Mount Hope	New Century	14	20	8	14	21	77
Wm. Fawcett, Tara	Ligowa	15½	15	8	17	20	75½
A. Rowan do	Banner	15	12	7	15	21	70
F. Scarrow do	Canadian King	13½	10	7	15	21	66½

NOTE.—The figures in parenthesis at the top of the table are the maximum scores.

RESULTS OF COMPETITIONS IN STANDING FIELD CROPS.—*Con.*

OATS.

Competitors in Order of Merit.	Name of variety.	General appearance.	Freedom from weeds.	Freedom from smut, rust, blight and insects.	Freedom from other varieties and other kinds of grain.	Yield and quality of grain.	Totals of scores.
BRUCE.—*Continued.*		(20)	(25)	(10)	(20)	(25)	(100)
CARRICK AGR. SOCIETY. *Judge—David Smith, Smithdale.*							
Andrew Schmidt, Mildmay	Sensation	18	23	9	18	22	90
Matthew Weiler, Formosa	Tartar King	18	24	9	15	23	89
H. P. Schmidt, Mildmay	Tartar King	19	20	9	17	23½	88½
J. G. Thomson, Mildmay	Banner	17	22	9	17	22½	87½
George B. Armstrong, Teeswater	Siberian	16	23	8½	18	21	86½
T. H. Jasper, Walkerton	Early Gothland	14½	24	9	18	20	85½
Geo. Reindhart, Mildmay	Sheffield	15	17	8	17	21	78
Jacob Miller, Mildmay	Banner	16	12½	9	18	22	77½
C. E. Boetz, Moltke	do	15	15	9	18	20	77
Moses Filsinger, Mildmay	Sterling	16	14	8	17	21	76
LUCKNOW AGR. SOCIETY. *Judge—R. H. Mayberry, Ingersoll.*							
Roderick, McKenzie, Lucknow	White Danish	16	21	8½	19	20½	85
Jno. McCharles, Clover Valley	New Sensation	16	23	8½	18	18	83½
Jas. Alton, Belfast	Ligowa	15	21	9½	17½	19	82
Jas. Baird, Lucknow	Sensation	14½	23	9	18	17	81½
Jno. McDiarmid, Lucknow	White Danish	15½	22	8	17	18	80½
Jno. McLeod, Lucknow	do	15	21	8½	18	17½	80
P. J. Downey, Clover Valley	New Sensation	14	23	9	17	16	79
Jas. McDonald, Lochalsh	New Century	13	22	9	18½	16	78½
Smith Bros., Clover Valley	Abundance	14	22	8	18	16	78
Jno. McKenzie, Lucknow	White Danish	13	20	8	19	15	75
Peter Torrance do	White	13	19½	9	19	13½	74
Walter Wilson do	do	12	23	8	17	13½	73½
Mrs. P. Watson do	20th Century	13	21	8	18	12	72
R. A. Reid & Sons, Pine River	Ligowa	16	20	5	12	17	70
Geo. S. Robertson, Lucknow	Siberian	15	12	8	18	17	70
CARLETON.							
CARLETON COUNTY AGR. SOCIETY. *Judge—D. D. Rogers, Kingston.*							
Wm. Nixon, Richmond		17	24	8	18	22	89
S. G. Gourlay, Diamond	Banner	17½	18	8	18	23	84½
J. J. Wilson, Carp	do	17	20	7	17	22	83
Geo. Boyce, Merivale	do	14	23	7	18	20½	82½
Robt. Richardson, South March		16	20	7	17	22	82
G. R. Bradley, Carsonby	Prince Royal	14	22¼	8	17	20¼	81½
A. H. Acres, Hazeldean		15½	17	8	18	22	80½
J. B. Wilson, Watterson's Corners	White Danish	13½	20	7	19	20	79½
Thos. Scissons, Dunrobin		13	22	7	17	20	79
A. H. Foster, Twin Elm	Irish White	16	16	7	17	22	78
J. F. Armstrong, Kinburn		16½	18	8	12	22	76½
Jno. Nesbitt, Fallowfield		14	15	7	16	20	72
John Storey, Hazeldean		12½	15	7	16	19½	70

NOTE.—The figures in parenthesis at the top of the table are the maximum scores.

RESULTS OF COMPETITIONS IN STANDING FIELD CROPS.—*Con.*

OATS.

Competitors in Order of Merit.	Name of variety.	General appearance.	Freedom from weeds.	Freedom from smut, rust, blight and insects.	Freedom from other varieties and other kinds of grain.	Yield and quality of grain.	Totals of scores.
DUFFERIN.		(20)	(25)	(10)	(20)	(25)	(100)
DUFFERIN CENTRAL AGR. SOCIETY. *Judge—A. J. Reynolds, Scarboro.*							
R. M. Mortimer, Honeywood....	Ligowa	18	23½	9½	19	20	90
Chas. Price, Shelburne.....	do	17	23	8½	19	21½	89
Rice Hill, Whitfield.....	Irish White	16	23	8½	18	21½	87
Arch. Greer, Perm.....	Early White Jewel	18½	20	9	16	22½	86
G. F. Gabriel, Shelburne.....	Rosedale	18	19	9	18	21½	85½
Alex. Karnawan do	Ligowa	16½	23	7	18	20½	85
Angus Smith do	Banner	17	20	9	16	22	84
R. G. Adamson, Whitfield.....	Irish White.....	15	23	9	18	18½	83½
Lemuel Ostrander, Reddickville.	20th Century	17	22	8	15	20½	82½
Jas. H. McKee, Whitfield.....	Siberian	16½	19	9	17½	20	82
J. F. Breen, Melancthon.....	Prince Royal	16	19	8	17	21	81
Geo. Tupling, Honeywood.....	Ligowa	16	19	8	18	19½	80½
W. A. Bradden, Shelburne.....	20th Century	16	16	9	18	21	80
Alex. McDonald do	Prince Royal	15	19	9	18	17½	78½
Jos. Tindale do	Mammoth Cluster	17½	16	7	17	20½	78
S. G. Shaw, Granger.....	Newmarket	14½	19½	8	18	17	77
Thos. McNab, Shelburne.....	1000 Dollar	15	18	7	16	20	76
DURHAM.							
CARTWRIGHT AGR. SOCIETY. *Judge—M. W. Sexsmith, Ridgeway.*							
Jas. Malcolm, Nestleton.....	Prince Royal.....	19	18	9	19	25	90
Fred W. Taylor, Blackstock.....	do	17½	24	8	18	22	89½
Melville Trewin do	Early Prolific....	17	22	9	18	23	89
Abraham Beacock do	Mammoth Cluster	16	24	10	18	20½	88½
Robt. Philp, Cartwright.....	White	16	25	8	19	20	88
David Malcolm, Nestleton.....	Prince Royal	20	16	9	17	25	87
R. J. Parr, Cadmus.....	White	17	20	9	16	23	85
Henry Mountjoy, Blackstock....	American Banner	14	18	8	16	24	80
Isaac Whitefield, Blackstock....	Prince Royal	16	15	10	16	22	79
Wm. Wilson, Cæsarea.....	English White...	20	.....	8	18	25	71
Jno. Jas. Parr, Blackstock.....	Prince Royal.....	20	.....	8	16	25	69
Richard Suggitt, Nestleton....	Banner	20	.....	10	5	25	60
ELGIN.							
SOUTH DORCHESTER AGR. SOCIETY. *Judge—J. W. Wheaton, Toronto.*							
J. A. Moore, Mapleton.....	Banner	18¼	22	9	17½	22	88¾
D. E. Shiveley, Springfield.....	Irish White	17¾	23	8	19	20½	88¼
Jno. A. Charlton, Springfield...	Storm King	19	20	8	19	22	88
David Clapton, Brownsville.....	Ligowa	17¼	24	7	19	20½	87¾
Wm. Fulkerson, Springfield.....	Storm King	16½	23	8	17	22½	87
Frank Kelly, Aylmer.....	Banner	18¼	22	6	18	21	85¼
Simon Charlton, Springfield....	Storm King	17¾	22	7	18	20	84¾
C. W. Charlton do	Banner	16	21	7	18½	20½	83
W. B. Martyn do	do	16	22	7	18	19¼	82¼
Jas. Smith do	do	16¾	19	7	18	20	80¾
Fred Orris do	do	16½	19	6	17	20½	79
Clark Rocky do		14¾	19	7	18	19¾	78½

N.B.—Elgin Moore, of Springfield. Field was nearly all cut before the judge arrived, otherwise it would have probably scored fairly high.

NOTE.—The figures in parenthesis at the top of the table are the maximum scores.

RESULTS OF COMPETITIONS IN STANDING FIELD CROPS.—*Con.*

OATS.

Competitors in Order of Merit.	Name of variety.	General appearance.	Freedom from weeds.	Freedom from smut, rust, blight and insects.	Freedom from other varieties and other kinds of grain.	Yield and quality of grain.	Totals of scores.
FRONTENAC.		(20)	(25)	(10)	(20)	(25)	(100)
KINGSTON TOWNSHIP AGR. SOCIETY. *Judge—John Brown, Pembroke.*							
A. E. Weller, Kingston Jct.	.....	19	20	10	18	24	91
Arthur Day, Collins Bay	Banner	16	20	8	19	23	86
H. J. A. Simpson, Cataraqui	.....	17	20	8	16	22	83
Jas. F. F. Sproule, Westbrook	Banner	15	23	8	15	19	80
M. Fowler, Glenburnie	do	14	20	8	15	19	76
F. Trudell, Collins Bay	do	15	20	9	10	18	72
J. K. Spooner, Glenburnie	do	12	18	7	16	18	71
Wm. Shannon, Glenburnie	do	15	15	7	15	18	70
F. Gates, Westbrooke	do	15	10	7	18	19	69
Jno. Reid, Glenburnie	do	12	18	8	12	18	68
GLENGARRY.							
KENYON AGR. SOCIETY. *Judge—T. G. Raynor, Ottawa.*							
Duncan Cameron, St. Elmo	Sensation	18	20	6	19	23½	86½
F. S. Campbell, Dominionville	.....	19	24½	6	15	21½	86
H. & G. Bennett, Sandringham	Banner	15½	22	6	19½	20½	83½
J. W. Kennedy, Apple Hill	do	19½	24½	6	10	22	82
D. J. Campbell, Maxville	20th Century	15	24	7	15	19	80
A. T. Bennett, Athol	Banner	15	19	6	19	20½	79½
D. A. Campbell, Dominionville	do	16	19	6	15	22	78
J. B. Barnett, Athol	do	18½	24	7	5	23	77½
Wm. Kennedy, Maxville	.....	16	20	6	17	18	77
J. J. Campbell, Athol	Banner	14½	18	6	18½	20	77
Jas. Kenauld, St. Isidore	do	18½	20	6½	7½	23½	76
J. J. Cameron, St. Elmo	do	18½	20	6	7	22	73½
Gedeon Bourgeon, St. Isidore	Small White	16	19	6	12	19	72
Norman Campbell, Athol	Banner	14½	22	7	5	21½	70
Robt. Mark, St. Elmo	do	15½	5	7	12	18½	58
GREY.							
COLLINGWOOD TP. AGR. SOCIETY. *Judge—Anson Groh, Preston.*							
W. H. Matthews, Clarksburg	Banner	15	20	9	18	19	81
A. McGowan, Ravenna	do	12½	22	6	18	21	79½
Foster Bros., Clarksburg	do	16½	15	8	17½	20½	77½
Thos. McMurchy, Loree	New Sensation	16½	10	9	19	22½	77
Chas. Parkinson, Thornbury	Snowdrop	13	18	7	18	20	76
Amos Kentnor, Clarksburg	Banner	16½	10	9	17	20½	73
Walter Hartman do	Probstar	11½	18	10	19	14	72½
Clifford Lougheed do	Banner	13½	13	8	18	19	71½
Thos. Carefoot, Redwing	Gothland	14½	6	8	19	22½	70
Elisha Parkinson, Thornbury	Snowdrop	15½	9	6	15	21	66½
Robt. Ruthven, Clarksburg	Scottish Chief	13	10	9	19	15	66
A. Spaul, Clarksburg	Banner	13½	5	6	18	19	61½
Thos. Armstrong, Ravenna	do	14½	7	6	12	21	60½

NOTE.—The figures in parenthesis at the top of the table are the maximum scores.

RESULTS OF COMPETITIONS IN STANDING FIELD CROPS.—*Con.*

OATS.

Competitors in Order of Merit.	Name of variety.	General appearance.	Freedom from weeds.	Freedom from smut, rust, blight and insects.	Freedom from other varieties and other kinds of grain.	Yield and quality of grain.	Totals of scores.
GREY.—*Continued.*		(20)	(25)	(10)	(20)	(25)	(100)
KEPPEL AGR. SOCIETY. *Judge—H. B. Jeffs, Bond Head.*							
Thos. Johnston, Kemble	Banner	14½	22	7	18	21	82½
Jas. King do	20th Century	14½	22	7	17	20	80½
H. Hurlburt do	Sensation	14	21	9	17	18	79
C. Johnston do	Silver Mine	12½	20	6	17	20	75½
A. Campbell do	do	12	19	8	17	19	75
Douglas Davidson do	Sensation	12½	19	7	16	18½	73
Jas. Hopper do	Ligowa	11½	18	6	16	18	69½
Geo. Crampton do	Banner	14	15	7	10	20	66
Geo. McKenzie do	Silver Mine	13	10	8	16	17½	64½
W. Shier, North Keppel	New Century	12	10	7	16	18	63
R. C. Davidson, Lake Charles	Ligowa	11½	12	6	16	17	62½
J. E. Johnston, Kemble	20th Century	11½	8	6	16	20	61½
Geo. Beckett do	Banner	11½	8	6	15	18	58½
F. Davidson do	Sensation	9	17	6	14	12½	58½
C. Cole, North Keppel	Mammoth Cluster	14	6	8	8	20	56
Dan. Davidson, Kemble	Silver Mine	9½	10	6	15	13	53½
S. GREY AGR. SOCIETY. *Judge—John McKee, Duntroon.*							
J. & J. Hunter, Durham	Prince Royal	12½	24	9½	18	22	86
A. J. Greenwood, Edge Hill	Siberian	12½	24	9½	16	2	84
Robt. Edge do	Sheffield Standard	10	23	10	18	22	83
Daniel Edge do	do	9	20	9	19	22½	79½
Wm. Weir, Durham	Siberian	8	23	8	17	23	79
A. S. Hunter, Durham	do	10	20	8	16	20	74
W. Ramage, Thistle	Tartar King	6	24	8	19	12½	69½
Wm. Ritchie, Edge Hill	Mammoth Cluster	8	23	10	10	18	69
Geo. Binnie, Bunessan	White Jewel	6	18	9	16	20	69
Wm. G. Frith, Edge Hill	Imp. American	5	17	8	16	19	65
T. W. Scarf, Rocky Saugeen	Can. Pride	10	10	5	15	20	60
WALTER'S FALLS AGR. SOCIETY. *Judge—Anson Groh, Preston.*							
Robt. J. White, Strathnairn	Siberian	17	23½	9½	19	22	91
Jas. Bowes, Strathnairn	Banner	18½	23½	7	19	20½	88½
Jas. Lemon, Walter's Falls	Sheffield Stand.	14½	23	9	18	22	86½
Fred Lemon, Bognor	Sensation	15½	22	9	18	21½	86
Robt. D. Bowes, Elm Hedge	Banner	15½	22	8	16	23	84½
Dugald Smith, Harkaway	Danish White	15½	22	8	17	21½	84
W. G. Milson, Goring	Abundance	14½	23½	6	19	20½	83½
Sam. Marshall, Walter's Falls	White Cave	16½	21	8	16	21	82½
W. I. Seabrook do	Ligowa	15½	19	9	18	21	82½
Jas. A. Hammill do	Siberian	17	16	9	17	22	81
John Sutherland, Jr. do	Derby	14	18	7	15	20	74
J. J. Morton do	Banner	15	10	7	15	19	66
W. H. Free, Strathnairn	Prince Royal	13	10	8	15	19	65

NOTE.—The figures in parenthesis at the top of the table are the maximum scores.

RESULTS OF COMPETITIONS IN STANDING FIELD CROPS.—*Con.*

OATS.

Competitors in Order of Merit.	Name of variety.	General appearance.	Freedom from weeds.	Freedom from smut, rust, blight and insects.	Freedom from other varieties and other kinds of grain.	Yield and quality of grain.	Totals of scores.
HALDIMAND.		(20)	(25)	(10)	(20)	(25)	(100)
CALEDONIA AGR. SOCIETY. *Judge—T. W. Lennox, Barrie.*							
Jas. Douglas, Caledonia	Banner	18½	24½	9½	19	24	95½
J. B. Calder, Carluke	Siberian	18	24	9½	19	22½	93
W. J. Grinyer, Caledonia	do	17½	23	9	18	22½	90
J. Weylie, Caledonia	do	16½	24	9	18	22	89½
W. A. Douglas, Tuscarora	Banner	15½	24	9	17½	23	89
Jno. T. Lee, Caledonia	Silver Mine	17½	24	8½	16	22	88
Jas. Forbes, Caledonia	do	15½	23	9	19	20	86½
Ed. Grinyer, North Seneca	Siberian	16	22	8½	18	21½	86
David Smith, Carluke	Sensation	14½	23½	6	18½	22	84½
Leonard Parker, North Seneca	Banner	14	23	8	15	21	81
WALPOLE AGR. SOCIETY. *Judge—I. F. Metcalfe, Collingwood.*							
Thos. Curwane, Jarvis	Siberian	15	24½	8	19	21	87½
Jos. Peacock, Sandusk	Imperial Ligowa.	17	15	9	19	21	81
R. W. Mason, Jarvis	Banner	11	16	7	19	16	69
F. M. Somers, Rockford	Black Beauty	14	15	8	10	20	67
J. J. Parsons, Jarvis		10	15	6	19½	14	64½
Jas. Hodges, Jarvis	Scottish Chief	11	5	9	18	17	60
W. D. Rolston, Garnet	New Sensation	15	.....	7	13	21	56
Jno. Mitchel, Jr., Jarvis	Scottish Chief	15	15	2	....	20	52
J. I. Smith do	Ligowá	7	8	7	19	10	51
E. B. McDonald do	Scottish Chief	14	.....	5	....	20	39
HASTINGS.							
FRANKFORD AGR. SOCIETY. *Judge—Adam Hood, Milliken.*							
D. Coon, Frankford	Banner	19	20	8½	18	22	87½
J. U. Simmons, Frankford	Sheffield Improved	19	20	8	18	22	87
W. F. Sullivan, Frankford	Banner	18	22	7	17	22	86
W. G. Ketcheson, Wallbridge	20th Century	15	20	8	18	22½	83½
E. B. Mallory, Frankford	Prince Royal	14	17½	8	18	23½	81
T. R. Mallory do	Abundance	14	18	8	18	22½	80½
R. McMurter do	Irish Victor	17	19	8	18	15½	77½
Geo. Nicholson, Wallbridge	Sheffield Standard	15	14	8	14	22	73
W. A. Reid, Trenton	Banner	12	20	8	18	10	68
T. H. Ketcheson, Frankford	English	12	16	8	18	12	66
Sam. Nicholson, Frankford	Banner	14	10	8	14	20	66
MADOC AGR. SOCIETY. *Judge—Adam Hood, Milliken.*							
W. F. Farrell, Hazzards	Storm King	19	24	9	17½	21	90½
Jno. Rollins, Cooper	do	18	23	9	17	21½	88½
P. Marlin, Madoc	20th Century	19	23	8	17	20½	87½
J. A. Caskey do	do	17	20	9	10	19	75
Jas. Hill do	do	14	16	8	17	19	74
Wm. T. Allen, Cooper	Banner	14	20	8	15	17	73½
Sam. Rollins do	Storm King	13½	18	8	12	22	73½
Angus Nicholson do	Black Diamond	13	18	7	12	17	67
John A. Ketcheson, Madoc	20th Century	13	16	7	10	17	63
Ed. McElroy, Madoc	White Barley	10	14	7	15	17	63

NOTE.—The figures in parenthesis at the top of the table are the maximum scores.

RESULTS OF COMPETITIONS IN STANDING FIELD CROPS.—*Con.*

OATS.

Competitors in Order of Merit.	Name of variety.	General appearance.	Freedom from weeds.	Freedom from smut, rust, blight and insects.	Freedom from other varieties and other kinds of grain.	Yield and quality of grain.	Totals of scores.
HURON.		**(20)**	**(25)**	**(10)**	**(20)**	**(25)**	**(100)**
HOWICK AGR. SOCIETY. *Judge—Henry Davis, Ivy.*							
Harvey M. Sparling, Gorrie.....	Swedish Select...	17	23	9	18	22	89
Wm. Brown, Fordwich.....	Am. Banner	16½	23	9	16	22½	87
Jno. Pritchard, Red Grove.....	Siberian	13	24	9	18	19	83
Jno. Dickert & Son, Red Grove..	Ligowa	15¼	24	9	13	19½	80¾
A. M. Darling, Mildmay.....	Abundance	15	14	8	19	23	79
Rich. Wilkin, Harriston.....	Lincoln	14	20	9	14	20	77
Jas. W. Edgar, Gorrie.....	Irish White	14½	17	9	16	20	76½
Edward Krohn do	Sheffield Standard	17	21	7	12	19	76
Jno. L. Wilson do	Banner	16	21	5	10	21	73
W. H. Weber, Lakelet.....	Ligowa	16	12	9	10	19	66
Albert Patterson, Newbridge....	20th Century	14	9	8	14	19	64
Walter Renwick, Huntingfield..	1001	11	15	6	14	17	63
Geo. Johnson, Fordwich.....	Sheffield Wonder.	13	12	9	10	19	63
Jno. Hindman, Gorrie.....	Banner	13¾	12	6	13	17	61¾
W. H. Gregg, Gorrie.....	Siberian	13	9	7	12	17	58
KENT.							
WALLACEBURG AGR. SOCIETY. *Judge—E. Robinson, O.A.C., Guelph.*							
Geo. Crawford, Electric.....	Imperial Banner.	17	22	8	18	23½	88½
Jno. Coveney, Baldoon.....	Dodd's 50 lbs.....	18	22	8	16	23	87
Jas. Harper, Wallaceburg.....	Prince Royal	16½	21	8	18	22½	86
Alf. Smith do	Banner	14½	23	7	18	19½	82
Langstaff Bros. do	Sensation	15	23	7	15	21	81
Dan. Coveney, Baldoon	Dodd's 50 lbs.....	14½	20	8	17	21	80½
Crowe Bros., Wallaceburg.....	do	15	22	7	16	20	80
L. O'Neil do	New Century	14	20	6	18	21½	79½
Robt. Drummond do	White Danish ...	12	23	8	18	18	79
Wm. Burgess & Son do	Dodd's 50 lbs.....	15	17	8	17	21½	78½
Geo. L. Mickle do	White Nation	12½	22	5	19	19½	78
Jno. Richardson do	Dodd's 50 lbs. ...	13½	18	8	18	19½	76½
Chas. Shaw, Tupperville.....	Prince Royal and Sensation	14½	18	8	17	18	75½
H. Holmes, Tupperville.....	White Jewel	15	15	8	17	18	73
LANARK.							
LANARK VILLAGE & BATHURST SOCIETY. *Judge—Wm. Hickson, Bobcaygeon.*							
Arch. McTavish, Balderson.....	Ligowa	18	24	8	18	22	90
Wm. Montgomery, Lanark.....	Br. Columbia ...	18½	23	7	18	22	88½
Wm. McNaughton, Balderson...	Irish Victor	17½	23	8	18	17	83½
Harry Hughes, Balderson.....	White Jewel and Banner	18	23	8	10	22	81
W. S. McNaughton, Lanark.....	Lincoln	16½	22	7	15	17½	78
W. D. Cunningham, Balderson..	Emporium	16	20	5	18	16	75
W. J. Rothwell, Lanark.....	White	15½	15	8	10	20½	69
J. L. Wilson, McGarry.....	Banner	16	12	5	17	17	67
Jas. E. Quinn, Ferguson's Falls.	Danish White ...	14½	10	8	17	16	65½
Jno. Miller, Balderson.....	White Jewel	12½	15	7	8	13½	56

NOTE.—The figures in parenthesis at the top of the table are the maximum scores.

RESULTS OF COMPETITIONS IN STANDING FIELD CROPS.—*Con.*

OATS.

Competitors in Order of Merit.	Name of variety.	General appearance.	Freedom from weeds.	Freedom from smut, rust, blight and insects.	Freedom from other varieties and other kinds of grain.	Yield and quality of grain.	Totals of scores.
LANARK.—*Continued.*		(20)	(25)	(10)	(20)	(25)	(100)
S. Lanark Agr. Society. *Judge—Wm. Hickson, Bobcaygeon.*							
Roy McLaren, Drummond Centre	Banner	17½	23	6	18	21½	86
J. C. White, Perth.....	do	18½	20	9½	19	18½	85½
Peter M. Campbell, Balderson...	20th Century	17	23	7	17	20½	84½
Sam. Wilson, Allin's Mills.....	Banner	17½	21	6	18	21	83½
Alex. McGarry, McGarry.....	do	18	20	6	18	20	82
A. B. McLean, Perth.....	Storm King	17½	21	7	18	17½	81
S. Miller, Allin's Mills.....	Mammoth Cluster	16	23	6	19	16½	80½
John Armour, Perth.....	White Jewel	17	22	5	14	19½	77½
John Shaw, Drummond Centre..	Emporium	18½	24	5	10	19½	77
J. M. Warren, Balderson.....	Siberian	14½	23	7	16	16	76½
A. E. White, Balderson.....	Daubeny	15	22	9	12	18	76
Geo. Matthews, McLean.....	Banner	16	22	6	14	16½	74½
R. G. Miller, Manion.....	Washington	15½	15	9	18	15	72½
W. R. McGarry, McGarry.....	Banner	18	10	5½	18	19½	71
Robt. E. Wilson, Scotch Line....	New Century ...	14	21	5	17	13½	70½
Peter S. McLaren, McGarry.....	White Jewel	15	15	6	18	16½	70½
D. A. Fisher, Harper.....	Early Progress..	14	20	5	17	13½	69½
J. W. Cameron, Perth.....	Danish White.....	16	16	7	13	17½	68½
Sam. Gamble, Wemyss.....	Tartar King.....	15	22	5	11	15	68
R. G. Bourns, Scotch Line	Banner	18	15	5	12	17	67
Robt. Livingstone, Richardson..	White Jewel and New Century ..	13½	23	6	6	18	66½
N. F. Oliver, Perth.....	Banner	16	15	5	14	16	66
Ed. Burke, Perth.....	White Jewel and New Century ..	12½	22	6	6	18½	65
W. A. Armstrong, Richardson...	New Century ...	11	23	6	5	16½	61½
W. A. Ryan, Perth.....	Sheffield Standard	13	5	8	14	12½	52½
Arch. McVeety, Perth.....	Banner	12	5	5	10	18	50
LINCOLN.							
Clinton Agr. Society. *Judge—J. W. Wheaton, Toronto.*							
Aaron Culp, Beamsville.....	Banner	18	22	8	18	20¾	86¾
W. D. Culp do	Ligowa	15¾	22	8	18	20¾	84½
J. W. Parker	Abundance	17½	18	8¼	18	22½	84¼
A. W. Culp do	Storm King	16¾	20½	8	18	20¾	84
R. P. Moore do	Am. Banner	15¾	22	8	18	19	83¾
G. W. West do	Silver Mine	16½	20	7	17	18½	79
Ed. Boughner do	Tartar King	16½	20	7½	15	19¼	78¼
Isaac Jarvis do	Silver Mine	16½	20	6½	17	18	78
Harry H. Tufford do	Joanette	14½	18	8	18	19	77½
Paul Marlatt do	Tartar King	17	20	7	15	18	77
A. E. Fieldmarshall do	1000 Dollar	11	16	5	15	13	60

Note.—The figures in parenthesis at the top of the table are the maximum scores.

RESULTS OF COMPETITIONS IN STANDING FIELD CROPS.—*Con.*

OATS.

Competitors in Order of Merit.	Name of variety.	General appearance.	Freedom from weeds.	Freedom from smut, rust, blight and insects.	Freedom from other varieties and other kinds of grain.	Yield and quality of grain.	Totals of scores.
LINCOLN:—*Continued.*		(20)	(25)	(10)	(20)	(25)	(100)
PENINSULAR CENTRAL SOCIETY. *Judge—Simpson Rennie, Toronto.*							
Lution Martin, Tintern	....	18	24	5	17	19½	83½
J. T. Taylor, Smithville	....	15	23	9	14	18	79
Ira N. Wardell do	....	14	20	10	13	19	76
John Grant do	....	10½	23	9	18	13	73½
Book Brothers, Grimsby	....	12½	23	6	15	16	72½
Walter Thomas, Grimsby	.....	12½	24	6	13	16	71½
W. M. McCollom, Fulton	.....	12	20	9	14	14	69
Jno. A. Book, Smithville	.....	13	15	10	13	18	69
Elijah Durham do	.....	12½	18	8½	13	16½	68½
Jno. Martin do	.....	10½	20	7	15	13	65½
J. D. Allen do	....	10½	16	9	13	13	61½
MIDDLESEX.							
N. MIDDLESEX AGR. SOCIETY. *Judge—J. H. Hare, Whitby.*							
Gilbert Grieve, Duncreif	Wyatt	17¼	23	8	18½	21	87¾
Chas. Bean, Brinsley	Siberian	16¼	23	8	18	21¾	87
Hughes Brothers, Falkirk	Wyatt	16¼	20	7½	18	20¾	82½
Davidson Robinson, Ailsa Craig.	Czar	16¼	20	8½	15	22	81¾
D. Rosser do	Ligowa	15¾	23¼	7	14	21½	81½
D. McArthur do	Banner	14½	21½	8	15	22	81
R. R. Cameron	do	13¾	20	6½	17	21¾	79
Jno. Dixon, McGuire	Prince Royal ...	17	12	8¼	14	22½	73¾
Thos. Hindmarsh, Ailsa Craig..	Banner	12½	21	7½	14	17½	72½
Rich. Neil, West McGillivray...	20th Century....	14½	10	8¼	15½	21½	69¾
Neil McAlpine, Ailsa Craig.....	Irish White	13¼	20	7½	8	20	68¾
John Carson, Ailsa Craig.....	Golden Drop	14	12	7	15	20¼	68¼
John D. McEwen, Falkirk.....	White Jewel	15¼	20	7¼	5	20½	68
Z. Lockhart, Ailsa Craig.....	Mortgage Lifter..	12¼	12	8	16	19	67¼
MUSKOKA.							
GRAVENHURST AND MUSKOKA AGR. SOCIETY. *Judge—J. W. Hyatt, West Lake.*							
Jas. C. Young, Gravenhurst.....	Ligowa	19	23½	8	19	24	93½
B. Laycock do	Black Tartarian..	19½	23	9	18	23	92½
W. W. Morrison do	20th Century	18	22	8	16	20	84
Herman Boonmann	Banner	19	16	8	14	20	77
G. W. Miller do	do	16	14	8	18	18	74
J. D. Brown do	20th Century	14	14	6	16	16	66
F. M. Robison . . do	Can. White	16	10	7	14	16	63

NOTE.—The figures in parenthesis at the top of the table are the maximum scores.

RESULTS OF COMPETITIONS IN STANDING FIELD CROPS.—*Con.*

OATS.

Competitors in Order of Merit.	Name of variety.	General appearance.	Freedom from weeds.	Freedom from smut, rust, blight and insects.	Freedom from other varieties and other kinds of grain.	Yield and quality of grain.	Totals of scores.
MUSKOKA.—*Continued.*		(20)	(25)	(10)	(20)	(25)	(100)
S. Muskoka Agr. Society.							
Judge—A. E. Calnan, Allisonville.							
Herman L. Goltz, Bardsville....	Imp. Scotch	15¾	23	9	18½	20	86¼
Alex. Barron, Bracebridge.....	Am. Banner	18	22	8	18½	17¾	84¼
Jas. Kaye, Bracebridge.....	Black Tartarian..	16½	19	8½	19	19½	82½
Geo. Yearly, Falkenburg.....	....	14¾	23	7	18½	17½	80¾
J. J. Beaumont, Bracebridge....	Sensation	13¼	22	7½	18	18	78¾
J. Byron Kaye do	do	14½	21	8	17	16½	77
R. E. Armstrong do	do	15½	17	7	18	18	75½
Wm. Naismith, Falkenburg.....	P'de of Midlothian	15	21	5	17½	16½	75
J. Nicholson, Bracebridge.....	New Century	9	23	8	18	9½	67½
Stephenson & Watt Society.							
Judge—A. P. McVannell, Picton.							
Thos. Hammill, Raymond.....	Am. Banner	17	23	8	17½	22	87½
Wm. Esson, Port Sydney.....	do	15⅓	22	8	18	22	83⅓
Wm. Chalmers, Parkersville....	Sheffield Standard	13¼	20	9	18	20½	80
H. T. Vincent, Allensville.....	do	13½	17	8	18	20½	77
W. G. Hammill, Raymond.....	.....	11⅓	19	9	18½	17½	75½
Thos. Graham, Raymond.....	Am. Banner	16½	14	9	15	20½	75
Alf. Kay, Port Sydney.....	Irish White	11	21	8⅓	15	18½	74
W. G. Burn, Ulswater.....	Storm King	11	18	9	16	18	72
W. F. Somerset, Port Sydney....	20th Century	6	17	6½	18	21	68½
Ed. Hamilton, Raymond.....	do	11¾	9	8	14	9½	62¼
J. N. Billingsley, Raymond.....	Irish White.....	12⅔	17	8	.....	18	55½
NIPISSING.							
Caldwell Agr. Society.							
Judge—Wm. Naismith, Falkenberg.							
S. Aubry, Verner.....	Banner	16	24	9	19¼	21¾	90
J. B. Canter, Verner.....	do	16	24	9	19	21¾	89¾
Theobile Filiatrault, Verner....	Storm King	18	24	9	18	20½	89½
Alf. Sylvestre do	Egyptian	16¼	24	9	18	22	89¼
Joseph Beaudry do	do	16	24	9	18	22	89
Rev. L. Ecuyer do	White	18	24	9	17	20	88
Jos. St. George do	Banner	18½	24	9	19	17	87½
Odilon Laprairie, Laprairieville.	Tartar King	16½	24	9	16	21½	87
Moise Paquette, Verner.....	Storm King	16½	23	9	18	20½	87
Octave Jalbert do	....	17	23	8	16	22	86
Leon Boutin do	....	16½	24	9½	16	19½	85½
Paul Cote do	....	18	23	9	16	18	84
Alf. Limoges, Limoges.....	Banner	15½	24	8	18	18	83½
Joseph Gireaux, Verner.	do	16½	24	9	15	18	82½

Note.—The figures in parenthesis at the top of the table are the maximum scores.

RESULTS OF COMPETITIONS IN STANDING FIELD CROPS.—*Con.*

OATS.

Competitors in Order of Merit.	Name of variety.	General appearance.	Freedom from weeds.	Freedom from smut, rust, blight and insects.	Freedom from other varieties and other kinds of grain.	Yield and quantity of grain.	Totals of scores.
NIPISSING.—*Continued.*		(20)	(25)	(10)	(20)	(25)	(100)
WARREN AGR. SOCIETY.							
Judge—R. E. Mortimer, Honeywood.							
J. Costella, Warren	Egyptian	18½	24	7	16	21½	87
W. E. Blair do	do	15	24	8½	12	20½	80
Eph. Currie do	20th Century	15½	20	8	15	19	77½
O. Rocheleau do	Banner	17¾	22	6	13	18	76¾
A. Guthrie do	New Century	16½	21	5	15	18½	76
Jno. Wistin, Kipling	Sterling	15½	20	6	15	19	75½
Thos. Nicholson, Warren	Banner	16	22	8	12	16	74
J. D. McFarlane do	do	16½	18	7	15	17	73½
Alf. Stewart do	New Century	16	15	9½	14	18	72½
A. Gagnon do	Banner	15¼	22	7	12	15	71¼
Leon Gervais do	do	10	23	8½	17	12½	71
M. Tremblay do	do	13½	23	8	12	13	69½
Jas. Fraser do	Egyptian	14	23	7	10	15	69
G. M. Warren, M.D. do	Banner	14	20	7	10	16½	67½
H. Montgomery do	Egyptian	15	20	6	8	17	66
H. Cherry do	Banner	12	20	6	10	12½	60½
Lawrence Shea do	do	13	18	5	8	14	58
L. Sutcliffe do	.....	13½	.....	7½	13	15½	49½
NORTHUMBERLAND.							
WOOLER AGR. SOCIETY.							
Judge—M. W. Sexsmith, Ridgeway.							
S. L. Terrill, Wooler	Banner	17	25	9	19	23	93
C. R. Terrill do	Am. Banner	18	25	9	16	23	91
W. Adams do	Ligowa	18	24	10	14	23	89
E. M. Wessells do	Dodd's White	18	16½	10	18	23	85½
R. McMaster do	Tartar King	15	15	10	20	25	85
R. McMurter, Frankford	Irish Victor	19	10	10	10	25	74
A. N. Master, Wooler	Tartar King	15½	14	8	15½	20	73
P. J. Moran do	20th Century	20	.....	9	18	25	72
Dan. McCall do	Am. Banner	20	.....	9	16	25	70
C. G. Ruttan do	White Oats and Barley	18	10	9	.....	25	62
David Teal do	Hercules	12	.....	8	16	21	57
ONTARIO.							
BEAVERTON AGR. SOCIETY.							
Judge—R. S. Hamer, Perth.							
Hodgkinson & Tisdale, Beaverton	Garton's Abundance	18½	23	6	20	23½	91
Alex. McDonald, Cannington	Irish White	17½	22½	7	18	23	88
F. W. Rilance, Beaverton	Bumper King	17	23	7	18	22	87
David McHattie do	20th Century	18	22	9½	18	19	86½
Robt. Ross do	American Banner.	17	19	5	18	23	82

NOTE.—The figures in parenthesis at the top of the table are the maximum scores.

RESULTS OF COMPETITIONS IN STANDING FIELD CROPS.—*Con.*

OATS.

Competitors in Order of Merit.	Name of variety.	General appearance.	Freedom from weeds.	Freedom from smut, rust, blight and insects.	Freedom from other varieties and other kinds of grain.	Yield and quality of grain.	Totals of scores.
		(20)	(25)	(10)	(20)	(25)	(100)
ONTARIO.—*Continued.*							
BEAVERTON AGR. SOCIETY.—*Cont'd.*							
Jno. Jardine Beaverton	Scottish Chief	17	21	6½	15	21	80½
Jno. A. Neale do	Prince Royal	14	18	7	19	21	79
Geo. Will do	Newmarket	12	21	9	16	20	78
F. C. Windatt do	Banner	13	23	6	19	16	77
Jno. Westlake do	Irish White	17½	12	4	19	23	75½
Fred Dixon, Gamebridge	Swedish Select	18	6	8½	14	23½	70
J. M. McLennan, Beaverton	20th Century	10½	15	7½	17	18	68
Wm. Wallace, Gamebridge	Early Danberry	13	20	.....	15	18½	66½
Duncan McCrae, Beaverton	Banner	10	17	5	17	17	66
SOUTH ONTARIO AGR. SOCIETY. *Judge—Jno. Campbell, Woodville.*							
Jas. Leask, Taunton	Sensation	19	20	8	20	23	90
W. A. Dryden, Brooklin	Siberian	17	24	8	17	21	87
W. D. Dyer, Colombus	Gold Mine	15	24	9	16	20	84
Robt. Cossins, Whitby	Big Four	17½	16	9½	17	23	83
R. W. Grierson, Oshawa	Sensation	17	23	9	14	17	80
Jno. Davis, Foley	do	16	20	5	19	19	79
D. M. Johnson, Myrtle Station	Banner	13½	20	9	17½	16	76
W. F. Batty, Brooklin	Ligowa	17	15	8	15	19	74
M. Crawforth, Whitby	Goldfinder	16	12½	9	18	16½	72
Westney Bros., Audley	20th Century	19	8	9	14	21	71
C. E. Bain, Taunton	Ligowa	15	12	9	16	18	70
Jno. Smith, Port Whitby	Goldfinder	16	.....	8	18	18	60
J. B. Mitchell, Whitby		16	.....	9	17	17	59
OXFORD.							
NORTH NORWICH AGR. SOCIETY. *Judge—I. F. Metcalfe, Collingwood.*							
Jno. McConachie, Norwich	Banner	17	23	10	19	21	90
W. G. Sangster do	Irish White	19	24½	4	19½	20	87
A. W. DeLong do	Siberian	18½	24½	5	16	21	85
H. & J. McKee do	Waverly	16	23	6	19	20	84
T. L. Dunkin do	Siberian	18	21	8	16	20	83
A. C. Cornwell do	Irish White	16	22	5	18	21	82
E. B. Palmer do	Prince Royal	16	23	5	14	21	79
Jas. Rettie do	Siberian	17	15	8	18	20	78
E. Butler do	do	9	20	5	18	18	70
Wilson Bros, New Durham	Irish White	13	15	4	16	19	67
Jno. A. Fleming, Holbrook	Banner	13	24	4	18	20	75
WEST ZORRA & EMBRO SOCIETY. *Judge—B. J. Waters, Ivan.*							
Robt. A. Matheson, Bennington	Banner	17½	24	9	19½	22½	92½
Harry Turner, Braemar	Siberian	17½	24½	8	17	21½	88½
Glendinning Bros., Bennington	Prince Royal	17	22½	9	18	21½	88
Jas. Baker, Bennington	Early Wisconsin.	17½	21	7	19½	22½	87½

NOTE.—The figures in parenthesis at the top of the table are the maximum scores.

RESULTS OF COMPETITIONS IN STANDING FIELD CROPS.—*Con.*

OATS.

Competitors in Order of Merit.	Name of variety.	General appearance.	Freedom from weeds.	Freedom from smut, rust, blight and insects.	Freedom from other varieties and other kinds of grain.	Yield and quality of grain.	Totals of scores.
OXFORD.—*Continued.*		(20)	(25)	(10)	(20)	(25)	(100)
WEST ZORRA AND EMBRO SOCIETY. —*Continued.*							
Alex. Smith, Embro	Early Wisconsin.	18	20	9	18	22	87
Columbus Ross do	White Scottish ..	17½	24	9	16½	19½	86½
Peter Smith do	Early Wisconsin.	15½	24½	9	18	17	84
J. M. Sutherland & Sons, Embro	Lincoln	15½	23	7½	19	17	82
Alex. Kennedy, Embro	Banner	15½	20	8½	19	18	81
H. A. Millard, Bennington	Prince Royal	14	20	9	18	16½	77½
David M. Ross, Embro	White Giant	15½	20	8	18	14½	76
J. R. Munro do	Prince Royal	14½	20	7	19	15	75½
John Whaley do	do	14	19	7½	18	16	74½
Henry Greenfield do	Black Diamond ..	17½	8	8	18	21½	73
R. H. Marshall do	20th Century	13	19	8	17	13	70
J. S. McDonald do	do	13½	14	8	16	14	65½
PARRY SOUND.							
PERRY AGR. SOCIETY. *Judge—Wm. Naismith, Falkenburg.*							
Jno. Craig, Kearney	Sensation	18	23	8	18	23	90
Geoffrey Streatfield, Emsdale	Monitor	17½	23	8	18	23	89½
W. E. Streatfield do	Scottish Chief ...	17	22½	8	18	23½	89
Emerling & Ott do	Tartar King	16½	22	8	19	23	88½
Chas. White do	Western Seed ...	17	23	8	18	22	88
Angus Galbraith, do	Black Tartar	16	23	8	18	22¼	87¼
David Thaw do	....	16½	22	8	18	22¾	87¼
Robt. Hayward do	Mainside	16	23	8	18	22	87
Robt. J. Gibson, Katrine	Banner	16	23	8	18	21¾	86¾
Ed. Roadway, Emsdale	New Century	16½	21½	8	17½	23	86½
Eric Streatfield, Proudfoot Tp.	White	16	23	8	17	22½	86½
Geo. Roberts, Emsdale	....	16	22	8	17	22½	85½
Peter Smith, Scotia	Sensation	16½	22	8	17	21½	85
Geo. S. Pruner, Emsdale	do	16	22	8	18	20	84
McMURRICH AGR. SOCIETY. *Judge—R. E. Mortimer, Honeywood.*							
Geo. McMarshall, McMurrich	.....	17	23	7	16½	22½	85½
Wm. Alexander, Doe Lake	White Giant	17¾	22½	8	15	20½	83¾
F. C. Judd, Doe Lake	50 lbs. Black	17½	19	5	12	20½	74
Harry Watson, Sprucedale	Banner	16¼	18	8	12	19	73¼
Thos. Johnston, Royston	Mammothe Cl'st'r	14	20	8	12	19	73
Albert Taylor, Starrat	Abundance	12½	18	9	15	18	72½
L. Gilmour, Doe Lake	Banner	15½	18	7	13	18½	72
Chas. Cudmore, Sprucedale	Storm King	14	20	7	10	20½	71½
H. H. Turnbull, Doe Lake	Siberian	16	18	6	10	20½	70½
Chas. Dennison, Starrat	Banner	14	18	4	12	19½	67½
Geo. E. Davison, Starrat	do	14	20	7	10	16	67
W. H. Emmerling, Sprucedale	do	10	.....	8	15	14	47

NOTE.—The figures in parenthesis at the top of the table are the maximum scores.

RESULTS OF COMPETITIONS IN STANDING FIELD CROPS.—*Con.*

OATS.

Competitors in Order of Merit.	Name of variety.	General appearance.	Freedom from weeds.	Freedom from smut, rust, blight and insects.	Freedom from other varieties and other kinds of grain.	Yield and quality of grain.	Totals of scores.
PERTH.							
ELMA AGR. SOCIETY. *Judge—R. H. Mayberry, Ingersoll*							
Wm. Struthers, Donegal	Banner	18	21	7½	18½	20	85
Wm. Robb, Newry	Silver Mine	17½	18	8	16	21	80½
J. S. Cowan, Donegal	do	15	19	8	17	20	79
Jos. Horn, Atwood	Banner	13½	20	9	18	14	74½
Alex. Struthers, Newry	do	15½	13½	8	16	20	73
And. Robb do	Silver Mine	17	8	6	18½	22½	72
Wm. Holman do	Banner	15	18	8	12	17½	70½
Henry Ronnenburg, Monkton	Ligowa	17	16	7	10	20	70
Thos. Newbigging, Atwood	Sheffield Standard	14½	13	8	15	18½	69
Jno. McKee, Atwood	Tartar King	15	13	7	13	20	68
S. PERTH AGR. SOCIETY. *Judge—David Smith, Smithdale.*							
Oliver Bros., Motherwell	Banner	18	22	9½	19	22½	91
Hazel J. White, St. Marys	do	17½	22	9	18	24	90½
Perry Doupe, Kirkton	Sheffield Standard	18	22	8	18	23	89
Wm. Mossip, St. Marys	Newmarket	18	20	8	17	23	86
Jno. Hooper, Metropolitan	White Marble	18½	15	10	19	23	85½
Michael Brethour, Woodham	Banner	18½	15	9	19	23½	85
Milton H. Switzer, Rannoch	Siberian	17½	15	9	19	24	84½
PETERBOROUGH.							
OTONABEE AGR. SOCIETY. *Judge—R. S. Hamer, Perth.*							
Jno. H. Fife, Lang	Siberian	15	24	8	18	18	84
P. Drummond, Keene	Irish White	16	24	4	19	20½	83½
Robert Weir, Lang	Sheffield Standard	14	21	9½	16	21½	82
Jno. Miller do	20th Century	15	24	9	14	19½	81½
Wm. W. Shearer do	do	15	24	8½	15	18	80½
Donald K. Cameron, Westwood	White Jewel	16	24	5	16	18	79
J. A. Drummond, Keene	Irish White	16½	21	3½	18	19½	78½
R. A. Nelson, Keene	Dodd's White	15½	21	7½	16	18	78
F. Birdsall, Birdsall	Irish White	13½	17	8½	19	19½	77½
John Lang, Jermyn	Banner	14	14	9	15	20½	72½
W. A. Nelson, Keene	Dodd's White	15½	13	6	16	18	68½
Jno. Byron, Lang	National	15	11	5½	17	18	66½
Alex. Spiers, Keene	Dodd's White	15½	14	3	14	19½	66
P. Humphries, Lang	Sterling	15	7	4	19	19½	64½
PETERBOROUGH INDUSTRIAL SOCIETY. *Judge—R. S. Hamer, Perth.*							
Chris. Houson, Keene	Irish White	18¾	24	6½	19	24	92¼
Bruce Savigny, Peterborough	Giant Prolific	18	24	7	18	22	89
Jno. Armstrong, Jermyn	Siberian	16	22	6	18	22	84
Jno. Buckham, Bensfort	20th Century	15½	22	5	19	22	83½
R. A. Deyell, Smithbank	Irish White	17	20	5	18	20½	80½
G. N. Halton, Peterborough	Clydesdale	13½	19	9	18	20	79½
C. E. Moore do	do	15½	13	10	19	21½	79

NOTE.—The figures in parenthesis at the top of the table are the maximum scores.

RESULTS OF COMPETITIONS IN STANDING FIELD CROPS.—*Con.*

OATS.

Competitors in Order of Merit.	Name of variety.	General appearance.	Freedom from weeds.	Freedom from smut, rust, blight and insects.	Freedom from other varieties and other kinds of grain.	Yield and quality of grain.	Totals of scores.
PETERBOROUGH.—*Cont'd.*		(20)	(25)	(10)	(20)	(25)	(100)
PETERBOROUGH INDUSTRIAL SOCIETY.—*Continued.*							
Al. Roberts do	20th Century	17	19	8	15	19½	78½
T. H. Graham do	....	15½	21	7	15	19½	78
M. J. Scollard, Ennismore.....	Tartar King	17½	19	7	12	22	77½
D. Young do	....	17	11	9	18	22	77
Dan. Crough do	Storm King	17	11	9	16	23½	76½
John Johnson, Peterborough....	Ligowa	15	19	7½	17	17	75½
L. F. Staples, Ida.....	Waverly	13½	19	4	18½	20	75
M. Y. Rowley, Peterborough....	Ligowa	16	14	5	17	22	74
W. D. Cavanaugh, Ennismore...	....	17	10	8	17	21	73
W. J. Crough do ...	Clydesdale	14	9	8	14	17½	62½
Jno. Buck do ...	....	14	.....	8½	12	23	57½
H. Conan, Peterborough.....	....	9	.....	8	13	17	47
PRESCOTT.							
ALFRED AGR. SOCIETY. *Judge—T. G. Raynor, Ottawa.*							
F. X. Cadieux, Alfred.....	White Russian ..	16	19	5	18	20	78
Sam. Parisien do	....	15	21	7	16	18½	77½
Nap. Lalonde do	Banner	15	22	7	14	18½	76½
Jos. Langevin do	....	15½	24	6	14	15½	75
Pierre Robillard do	....	13½	24	7	10	16½	71
Jos. Montpellier, Alfred Centre.	Banner	15	24	7	10	14	70
L .Tourangeau, Alfred.....	....	11½	22	5	18½	12	69
Nap. Lamarche, Alfred.....	....	12½	20	7	16	12½	68
R. H. Chamberlain, Alfred Sta..	....	11½	20	7	15	13½	67
Alphonse Leduc, Alfred.....	....	12½	20	7	5	14½	59
Ed. Carriere, Ritchance.....	Sensation	10½	15	7	8	12½	53
Nap. Marleau, Ritchance.....	Tartar King	10	15	6	7	11	49
PRINCE EDWARD.							
PRINCE EDWARD AGR. SOCIETY. *Judge—Jno. Brown, Pembroke.*							
W. J. Barber, Ameliasburg.....	Sensation	20	24	8	20	23	95
Malcolm B. Clark, Hallowell....	Abundance	17	24	7	19	22	89
M. A. Foster, Bloomfield.....	20th Century	17	24	8	18	21	88
Ed. B. Purtell, Bloomfield.....	Storm King	13	23	8	18	17	79
Earl G. Purtell, Gilbert's Mills...	Egyptian	14	23	6	18	17	78
A. F. Rightmeyer, Bethel.....	Banner	16	20	7	15	19	77
Clarence Mallory, Bloomfield....	Tartar King	15	18	8	15	20	76
H. D. Clemenson, Hillier.....	Abundance	14½	18	7	18	18	75½
Morden Gilbert, Bloomfield.....	Ligowa	15	20	7	15	18	75
Willis Yerox, Picton.....	....	13	20	5	18	18	74
Wellington Boulter, Demorestville	Banner	15	15	7	15	21	73
Russell Reid, Picton.....	....	15	15	5	18	19	72
Jerry R. Leavens, Bloomfield....	....	13	18	7	18	16	72
E. C. Metcalfe, Picton.....	Banner	14	20	5	15	18	72
H. Leavens, Bloomfield.....	20th Century	15	15	5	18	18	71
Cannon Metcalfe, Cherry Valley.	....	12	15	5	15	19	66

NOTE.—The figures in parenthesis at the top of the table are the maximum scores.

RESULTS OF COMPETITIONS IN STANDING FIELD CROPS.—*Con.*

OATS.

Competitors in Order of Merit.	Name of variety.	General appearance.	Freedom from weeds.	Freedom from smut, rust, blight and insects.	Freedom from other varieties and other kinds of grain.	Yield and quality of grain.	Totals of scores.
RENFREW.		(20)	(25)	(10)	(20)	(25)	(100)
COBDEN AGR. SOCIETY. *Judge—R. N. Woods, Metcalfe.*							
Allen Guest, Bromley	Tartar King	15	24	7	19	22	87
Malcolm McLaren, Cobden	Banner	16½	15	10	19	23	83½
W. J. Oates, Queen's Line	do	16	13	9	19	22	79
J. C. Bulmer, Cobden	do	16	24	8½	10	20	78½
Harry Lipsey do	do	16	23	8	8½	18	73½
Robt. Freeland do	do	16	10	8	17	21	72
Peter Wilson do	.....	16	23	6	10	16½	71½
Thos. Appleby do	Scottish Chief	13	30	6	15	17	71
Thos. New, Jr., Bromley	Banner	16	23	7	4	20	70
Jno. Burwill, Cobden	do	16	23	7	4	19	69
Sam. McMillan do	20th Century	14	10	8	10	22	64
Jas. Guest do	Banner	13	14	6	11	18	62
N. RENFREW AGR. SOCIETY. *Judge—R. N. Woods, Metcalfe.*							
Jno. White, Beachburg	Bumper King	16	24	9	19	22	90
Osborne Wright, Beachburg	Banner	16	23⅓	8	15	21	83½
Jno. Stevenson, Westmeath	Waverly	14	24	8	19	18	83
Harris Brown, Beachburg	Prince Royal	16½	24	5	15	22	82½
J. A. Beach, Beachburg	Newmarket	14½	24	8	10	19	75½
Wm. McLellan, Westmeath	Banner	16	24	8	7½	19	74½
Jno. J. McLean, Westmeath	do	16⅔	10	8	12	23	69½
W. J. Richardson, Forester's Falls	do	14	10	8	10½	21	63½
W. Headrick, Westmeath	Dodd's White	16	.....	9	15	22	62
R. W. Ross, Westmeath	Banner	12	.....	7	5	22	46
Jno. Beauprie, Beachburg	do	14	.....	7	8	14	43
S. RENFREW AGR. SOCIETY. *Judge—D. D. Rogers, Kingston.*							
G. MacIntyre, Renfrew	Siberian	17	21	8	19	22	87
Robt. Leitch do	.....	16	23	9	17	20	85
J. B. Gibbons do	Ligowa	17	19	6	19	23	84
J. H. Fraser, Burnstown	.....	14	23	7	17	22	83
Jno. B. McLaren, Renfrew	.....	15	21½	7	18	21	82½
D. Barr, Jr. do	.....	15	18½	9	18	21	81½
Alex. Leitch do	Bonanza	16	20	7	17	21	81
Thos. Barr, Bromley	Banner	15	18	8	18	20	79
Jno. Stewart, Renfrew	.....	13⅓	20	8	17	20	78⅓
D. Muirhead, Renfrew	Manitoban	15	18	7	17	21	78
Archie Yuill, Burnstown	.....	11	23	7	18	18	77
Mackie McLaren, Castleford Sta.	.....	12	20	6	18	19	75
D. Lackie, Balsam Hill	.....	12	20	8	14	19	73
A. H. Gibbons, Admaston Sta.	.....	13	18	8	12	19	70
SIMCOE.							
E. SIMCOE AGR. SOCIETY. *Judge—D. James. Thornhill.*							
Jno. R. Harvie, Orillia	Early Jewel	16	24	7½	18	23	88½
Wm. C. Wilson, East Oro	Washington	16½	24	8	18	21½	88
Alex. Cuppage, Orillia	Banner	16	21	8½	18	21½	85

NOTE.—The figures in parenthesis at the top of the table are the maximum scores.

RESULTS OF COMPETITIONS IN STANDING FIELD CROPS.—*Con.*

OATS.

Competitors in Order of Merit.	Name of variety.	General appearance.	Freedom from weeds.	Freedom from smut, rust, blight and insects.	Freedom from other varieties and other kinds of grain.	Yield and quality of grain.	Totals of scores.
SIMCOE.—*Continued.*		(20)	(25)	(10)	(20)	(25)	(100)
E. Simcoe Agr Society.—*Cont'd.*							
Wm. Gallagher do	Irish White	17½	23	6½	18	19	84
Dan. Cotton do	Whiteside	15	22	8½	16	21	82⅓
Robt. B. Anderson, Rugby.....	Irish White	14½	23	8	18	18	81½
C. S. Harvie, Orillia.....	Ligowa	14½	21	8	18	19	80½
Jno. C. Harvie, Orillia.....	Banner	15	24	8	17	15	79
Allen Johnston, Rugby.....	Mammoth Cluster	15	22	8	18	13½	76½
Dennis Coffee, Orillia.....	Irish White	13⅓	21	7½	17	13	72
John Langman, Rugby.....	Banner	12	20	7	16	15½	70½
Elmvale Agr. Society. *Judge—A. J. Reynolds, Scarboro Junction.*							
Wm. Story, Crossland.....	Newmarket	18	22	8½	18	22	88½
Jas. Strath, Crossland.....	Sensation	17⅓	22	9	18	21	87½
Wm. Edwards, Saurin.....	Early White Jewel	17½	21	7	17	23½	86
Geo. Harber, Crossland.....	Mammoth Cluster	16	23	8½	18½	19	85
Thos. Wallace, Elmvale.....	Sensation	17	20	9½	17	21	84½
Jno. Kidd, Langman.....	Siberian	16⅓	19½	9	17	22	84
H. Edwards, Saurin.....	Early White Jewel	17½	17	8½	18	22½	83½
Robt. Black, Saurin.....	Banner	17	22⅔	8½	14	21	83
Thos. E. Smith, Vigo.....	Abundance	15½	19	9	18	21	82½
Geo. Ritchie, Elmvale.....	Newmarket	16⅔	20	8	18	19½	82
Albert Priest do	Early White Jewel	16½	21	6	15	20	78½
Jas. McDermott do	Ligowa	16½	16	8	17	19	76½
Herbert Gill do	Banner	14	15	8½	17	17	71½
Tiny & Tay Agr. Society. *Judge—D. James, Thornhill.*							
J. T. Simpson, Waverley.....	White Jewel	17½	23	7½	18	22	88
Chas. Snider, Wyevale.....	Banner	17½	23	8	17½	21	87
Jos. Levigne, Midland.....	Sensation	16	22	7½	17	20½	83
Levi Taylor, Victoria Harbour..	20th Century	16	14	8½	17	21½	77
Digby Horrell, Midland.....	Sensation	16	14	9	15	21½	75½
Arthur Irwin, Midland.....	English White ...	14½	22	8	17	13	74½
Thos. Rankin, Wyebridge.....	20th Century	15⅓	10	7½	18	22	73
Jno. Rankin do	Scottish Chief...	13½	8⅓	6½	18	21	67½
Jas. Reynolds do	Banner	13	10	7½	15	21	66½
Wm. Charles do	....	15	9	8	13½	20	65½
Jos. Elliott, Elliott's Corners....	20th Century	12	10	8½	15	19	64½
G. H. Murdoch, Wyevale.....	White Jewel	14	3	6	10	21½	54¼
VICTORIA.							
Eldon Agr. Society. *Judge—J. H. Hare, Whitby.*							
Geo. McKague, Cannington.....	Abundance	17¼	24½	8	19	21½	90½
J. & D. J. Campbell, Woodville...	Excelsior	16¼	24	8	19	22	89¼
A. D. McLeod do ...	Abundance	17	24	6½	19	21¼	87¾
And. McKay do ...	Newmarket	15⅓	24	8	19	20½	87
Jno. B. McLeod do ...	Prince Royal	15⅓	23	8½	17	22	86
D. C. Ross do ...	Banner	15¾	24	8½	16	21	85¼

Note.—The figures in parenthesis at the top of the table are the maximum scores.

RESULTS OF COMPETITIONS IN STANDING FIELD CROPS.—*Con.*

OATS.

Competitors in Order of Merit.	Name of variety.	General appearance.	Freedom from weeds.	Freedom from smut, rust, blight and insects.	Freedom from other varieties and other kinds of grain.	Yield and quality of grain.	Totals of scores.
VICTORIA.—*Continued.*		(20)	(25)	(10)	(20)	(25)	(100)
ELDON AGR. SOCIETY.—*Cont'd.*							
W. R. Greenway do ...	Swedish Success.	13¼	21	8½	18½	20½	81¾
Jno. Vanstone, Hartley.....	Newmarket	14¼	20	9	19	19	81¼
Jno. Morrison, Argyle.....	White Cluster ...	14¼	22	5½	17½	19¼	78½
D. N. Smith, Lorneville.....	Banner	14¼	15	6½	18	16¾	70¾
Jno. Smith, Lorneville.....	Abundance	15¾	14	6	14	18¼	68
Jas. Jordan, Woodville.....	Newmarket	17½	5	8	13	21	64½
Thos. Russell do	do	18	5	8½	8	21½	61
J. E. Dixon do	Sheffield Standard	13¼	4	7½	14	18½	57¼
VERULAM AGR. SOCIETY. *Judge—J. H. Hare, Whitby.*							
Mrs. T. B. Taylor, Bobcaygeon..	Siberian	18	22	8	18	22¼	88¼
Wm. Lewis, Dunsford.....	do	17	21	8½	18	22½	87
Robt. T. Robertson, Bobcaygeon	Sensation	16¾	23	7⅝	17	22¼	86¾
Garfield Kennedy do	Banner	16¾	22⅓	8	18½	20½	86¼
Thos. Cosh do	Sheffield Standard	15½	23	7	18	21	84½
Ross Kimble do	Irish White	15¾	23¼	7½	15½	22	84
Jas. McL. Oliver do	Sensation	17	22	7½	15	20½	82
David Logan do	Bumper King ...	14½	21	7½	18	20¼	81¼
Isaac Lewis, Dunsford.....	Banner	13	22	8	17	20	80
Wm. Murdoch, Dunsford.....	Sensation	14½	20	7½	16½	21¼	79¾
Dugald Robertson, Bobcaygeon..	do	13½	21½	7½	15¾	21½	79½
R. C. Devitt, Bobcaygeon.....	Banner	15½	21½	6½	15¾	20	79¼
Norman Robertson, Dunsford...	Sensation	16	21	8	12¾	21¼	79
M. M. Boyd, Bobcaygeon.....	Siberian	17¾	14¾	7½	15	23¾	78¾
J. J. Devitt do	Banner	13	23	6½	16	20	78½
Milton Justus do	do	13½	20	6	17¾	21	78¼
R. E. Thurston do	do	16½	15½	7	16¾	22¼	78
Jno. Rich do	Surprise	14½	22	7½	16	17½	77½
Chas. Thurston do	20th Century	17⅓	18	8	12	21¼	76¾
David Lewis do	Siberian	16½	21	8	10	19	74½
Thos. Robertson, Dunsford	Sensation	17	12½	8	15	21½	74
Jas. Seymour, Bobcaygeon	Banner	13¼	15	7	17	20¾	73
H. J. Seymour do	do	15½	15	6½	15½	19	71½
Thos. Fairbairn do	Surprise	13	12	7	15	21¾	68¾
Jno. J. Robertson, Dunsford....	Sensation	14¼	5	7¼	15	21	62½
WELLINGTON.							
CENTRE WELLINGTON AGR. SOCIETY. *Judge—Robt. Murphy, Rosemount.*							
Jas. Grant, Mimosa.....	{New Century / New Zealand}	17½	24	7	18	22	88½
Robt. Tindale, Fergus	Abundance	16½	22	7	19	20½	85
And. Thompson, Fergus.....	Banner	16	21	8	18	21	84
Jas. A. Milne, Fergus.....	Imp. American..	15½	24	8	15	19	81½
W. J. Deans, Fergus.....	Newmarket	16½	16	9	17	22½	81
Geo. A. Wallace, Ponsonby.....	do	16	21	7	15	20½	79½
J. A. Lindsay, Fergus	Early Empire ...	14	20	7	17	21	79

NOTE.—The figures in parenthesis at the top of the table are the maximum scores.

RESULTS OF COMPETITIONS IN STANDING FIELD CROPS.—*Con.*

OATS.

Competitors in Order of Merit.	Name of variety.	General appearance.	Freedom from weeds.	Freedom from smut, rust, blight and insects.	Freedom from other varieties and other kinds of grain.	Yield and quality of grain.	Totals of scores.
WELLINGTON.—*Continued.*		(20)	(25)	(10)	(20)	(25)	(100)
CEN. WELLINGTON AGR. SOCIETY.—*Continued.*							
Alb. McLelland, Metz	Empire	14½	20	7½	17	19	78
Alf. Farrow, Speedside	Banner	15	22	7	14	20	78
Alex. Stewart, Living Springs	Sensation	15	18	8	16	20½	77½
Alb. J. Milne, Spires	England's Glory	14½	20	8	16	18	76½
J. A. Watt, Salem	No. 1 White Manitoba	17	10	8	19	21½	75½
R. T. Pritchard, Fergus	Irish White	13	21	6	16	19	75
Wm. Barber, Salem	New Siberian	17½	7	7	18	20½	70
J. B. Lush, Barrie Hill	Cluster Abund'ce.	15	8	7	18	21½	69½
MT. FOREST AGR. SOCIETY. *Judge—Robt. Murphy, Rosemount.*							
W. J. Wallace, Mt. Forest	White Russian	16	25	8½	17	20	86½
Thos. Anderson, Mt. Forest	Garton's Abundance, Century	16½	22	8½	18	19½	84½
D. McQueen, Conn	Banner	16	25	8	16	19	84
D. Murphy, Mt. Forest	Garton's Abundance, Century	16	22	8	18	19	83
F. Rusnell, Conn	Scottish Chief	16	21	7	17	20	81
C. Nicholson, Mt. Forest	Banner	15½	20	8	16	20	79½
E. Petyold, Mt. Forest	Dodd's White	15½	20	8	16	19	78½
Jos. Williamson, Mt. Forest	Banner	14	24	8	14	17	77
Corley Bros, Mt. Forest	White Russian	14	18	7	17	18	74
Chas. Duncan, Egerton	Banner	15½	12	7	16	21	71½
J. A. Ross, Cotswold	Sheffield Standard	15½	12	7	16	21	71½
A. Hutchinson, Mt. Forest	Tartar King	15½	10	9	17	20	71½
Jno. Ross do	Banner	14½	15	7	13	19	68½
A. E. Caulfield do	Sterling	15½	10	8	16	19	68½
Sam. Shire, Cedarville	Banner	15	15	8	12	18	68
Hugh Thompson, Riverstown	do	15	15	8	12	18	68
G. Thompson do	Ligowa	15	12	8	13	18	66
Jno. Drewry, Mt. Forest	Banner	14	5	8	15	18	60
PUSLINCH AGR. SOCIETY. *Judge—W. S. Fraser, Bradford.*							
J. W. Kerr, Morriston	Lincoln	17½	24	9	18½	23	92
H. McCaig, Aberfoyle	do	17	24	9	19	19	88
Jno. A. Cockburn, Aberfoyle	do	15½	24	8½	19	19	86
Chas. Currie, Morriston	Bumper King	16	20	9	18	21	84
D. A. McNaughton, Morriston	do	15½	24	8	17	19	83½
W. J. Little, Hespeler	White Jewel	15	21	8	17	20	81
Jno. Penrice, Morriston	Lincoln	15	18	8	18	20	79
W. R. Mason, Aberfoyle	do	14½	23	7½	18	15	78
Phillip Crimless, Aberfoyle	Bumper King	14½	16	7	18	20	75½
Thos. Mahon, Aberfoyle	Irish Victor	13	18	7	17	19	74

NOTE.—The figures in parenthesis at the top of the table are the maximum scores.

RESULTS OF COMPETITIONS IN STANDING FIELD CROPS.—*Con.*

OATS.

Competitors in Order of Merit.	Name of variety.	General appearance.	Freedom from weeds.	Freedom from smut, rust, blight and insects.	Freedom from other varieties and other kinds of grain.	Yield and quality of grain.	Totals of scores.
WENTWORTH		(20)	(25)	(10)	(20)	(25)	(100)
WEST FLAMBORO AGR. SOCIETY. *Judge—Jno. Campbell, Woodville.*							
Wm. Manary, Freelton	Banner	18	22	9	18	20	87
G. T. Misener, Copetown	Sheffield Standard	18½	23	6	19	18	84½
Geo. Harris, Flamboro Centre	Storm King	17	20	9	16	22	84
Wm. Beaton, Freelton	White Jewel	15½	23	7½	17½	19	82½
Burdge Gunby, Mountsburg	20th Century	17	22	8	15	20	82
Jas. A. Gray, Freelton	Waverly	15	22	8½	17	19	81½
Jas. A. McKay, Waterdown	Ligowa	15	22	8	17½	18½	81
Thos. Goodbrand, Clappisons'	Mammoth Cluster.	16	21	9	16½	18	80½
R. G. Reid, Freelton	Ligowa	14½	21½	9	17	18	80
Wm. Linn, Campbellville	Mammoth Cluster	16	20	8	15	19	78
Jno. Rutherford, Strabane	Mammoth Cluster	14	20	7	15	16½	72½
Walter Johnston do	Golden Fleece	17	10	5	18	19	69
Jerome O'Connor, Freelton	Mammoth Cluster	11	10	8	18	13	60
RICHMOND HILL AGR. SOCIETY. *Judge—E. Robinson, O.A.C., Guelph.*							
Jas. McLean, Richmond Hill	Prince Royal	17	24	8	18	20½	87½
W. H. Clubine, Thornhill	Early Bohemia	16½	23	8	18	21½	87
Albert Jones, Hope	Sensation	16½	22	8	17	21	84½
Jos. Graham, Carrville	Prince Royal	16½	20	7	18	21½	83
Fred A. Clarke, Headford	Wide-awake	16	20	7	18	21	82
J. Lunan, Victoria Square	White Cluster	16½	18	7	18	22	81½
Frank A. Legge, Jefferson	Banner & Dodd's White	17	22	5	17	19	80
Jos. Burnett, Elgin Mills	Sensation	15	22	7	17	18	79
Geo. Paget, Dollar	20th Century	14½	20	7	17	19	77½
Wm. Palmer, Richmond Hill	Am. Banner	17½	10	7	18	21½	74
SCARBORO AGR. SOCIETY. *Judge—Jno. McKee. Duntroon.*							
W. A. Patterson, Agincourt	White Cluster	16½	25	9½	19	24	94
W. G. Kennie, Ellesmere	Lincoln	17½	24	9	19	24	93½
Jno. Hall, Woburn	20th Century	18¾	23	9	18	24½	93¼
R. M. Loveless, Agincourt	Lincoln	17	24	9	19	24	93
Wm. Loveless, Ellesmere	do	16½	24	9½	19	23	92
A. J. Patterson do	White Cluster	18¼	24	9½	19¾	20	91½
B. T. Law, Coleman	Abundance	16	20	9½	19½	25	90
Jas. McCowan, Brown's Corners	Lincoln	19½	15	9½	19½	25	88½
Jno. Baird, Woburn	20th Century	17	20	9	19	23	88
Geo. B. Little, Brown's Corners	Banner	10	24	9½	19½	25	88
J. J. Weir, Malvern	20th Century	14½	20	9	19	23½	86
R. W. Thompson, Ellesmere	Sensation	10	22	10	19	24	85
Jno. Kennedy, Agincourt	Banner	19½	10	10	19½	24½	83½
J. A. Rennie, Milliken	Lincoln	12	20	8	19	24	83
Hugh K. Clarke, Agincourt	Bumper King	18	10	9	19½	24	80½
Jas. G. Robinson, Markham	Lincoln	14½	12½	9½	19½	24	80
R. B. Ormerod, Brown's Corners	Sterling	10½	15	8	18	24½	76
Chas. Mason, Ellesmere	Sensation	12	20	7	15	20	74
Edw. Mason, O'Sullivan Corners	do	17	15	8	16	15	71

NOTE.—The figures in parenthesis at the top of the table are the maximum scores.

RESULTS OF COMPETITIONS IN STANDING FIELD CROPS.—*Con.*

BARLEY.

Competitors in Order of Merit.	Name of variety.	General appearance.*	Freedom from weeds.	Freedom from smut, rust, blight and insects.	Freedom from other varieties and other kinds of grain.	Yield and quality of grain. †	Totals of scores.
BRANT.		(20)	(25)	(10)	(20)	(25)	(100)
ONONDAGA AGRI. SOCIETY. *Judge—A. P. McVannell, Picton.*							
Chas. Edwards, Onondaga.....	Mandscheuri	18¾	24	9½	19	23½	94¾
R. J. Robertson, Cainsville.....	do	17½	22	9	18	23¼	89¾
Hilton Hurd, Onondaga	do	16	23	9	18½	22¾	89¼
R. E. Lampkin, Cainsville.....	do	16¼	22	9	17½	20½	85¼
C. W. Burrill, Onondaga.....	do	15¼	20	9	19	20½	83½
Henry Preiss, Tuscarora.....	do	15	20	9	17	19½	80½
Wood Bros., Onondaga.....	do	16	20	9	14	18	77
F. G. Thomson, Cainsville.....	do	15	15	8	18	20	76
Wm. Simpson, Onondaga.....	do	11½	19	9	16	20	75½
A. W. Vansickle do	do	15	13	8½	18½	20	75
A. A. Hamilton do	do	12¼	14	8½	19	19	72¾
Geo. Simpson do	do	9¾	17	9½	15	18½	69½
N. Matthews do	do	11	10	8	11	17	57

WHEAT.

HURON.							
KIRKTON AGR. SOCIETY. *Judge—T. G. Raynor, Ottawa.*							
W. J. Robinson, Kirkton.....	Dawson's Golden Chaff	19	24½	8½	11	23½	86½
Arthur Francis do	Dawson's Golden Chaff	19	24	8	10½	23½	85
W. Sparling, Anderson.....	Dawson's Golden Chaff	18	25	8	11½	22	84½
A. J. Dow, Russeldale.....	Dawson & Harvest King	18¼	24	6⅓	11½	23¾	84
M. H. Switzer, Rannoch.....	Dawson & Bonnell	18¼	24½	7¼	10½	23	83½
Albert Shier, Kirkton.....	Dawson's Golden Chaff	18½	24	7	10½	23	83
Joseph Kirk do	Dawson's Golden Chaff	18	24½	7	10½	23	83
Wm. Gilfillan do	Bonnell	17½	24	7½	11½	21½	82
Perry Doupe do	Dawson's Golden Chaff	17½	24	8½	10	22	82
Mrs. W. J. Tufts do	Dawson's Golden Chaff	18	23½	7½	10	23	82
Everette Doupe do	Dawson's Golden Chaff	16½	23½	9	11	21½	81½
Jno. Urquhart do	Dawson's Golden Chaff	17¾	24	7	10	22½	81¼

* General appearance—Considering stand of crop, type of plant, vigour, and uniformity of growth, method of seeding and absence of lodging.

† Yield and quality of grain—Considering proportion of well-filled heads of plump grain of good quality and uniformity of maturity.

NOTE.—The figures in parenthesis at the top of the table are the maximum scores.

RESULTS OF COMPETITIONS IN STANDING FIELD CROPS.—*Con.*

WHEAT.

Competitors in Order of Merit.	Name of variety.	General appearance.*	Freedom from weeds.	Freedom from smut, rust, blight and insects.	Freedom from other varieties and other kinds of grain.	Yield and quality of grain.†	Totals of scores.
		(20)	(25)	(10)	(20)	(25)	(100)
HURON.—*Continued.*							
KIRKTON AGR. SOCIETY—*Con.*							
David Hazelwood, Kirkton	Dawson's Golden Chaff	17¼	24½	7	10	21¾	80½
E. Hewitt do	Dawson's Golden Chaff	17¾	23½	7	10	22	80¼
Hugh Berry, Woodham	Dawson's Golden Chaff	17	24	9	10	20	80
A. H. Switzer do	Michigan Amber.	17	19	8	12	23	79
Ratcliffe Bros., Anderson	Dawson's Golden Chaff	17¾	20	7½	10	23	78¼
Phillip Herm, Whalen	Dawson's Golden Chaff	16¼	23¾	9	9	20	78
G. Clarkson Switzer, Kirkton	Dawson & Bonnell	16	24	9	9	20	78
Phillip Blackler, do	Dawson's Golden Chaff	16	24	7	10½	20½	78
J. A. Kirby, Berrylands	Dawson's Golden Chaff	16	24	6¾	10	21	77¾
Geo. Spearin, St. Mary's	American Banner	16	21	6	11	22½	76½
Jno. A. Robinson, Russeldale	Dawson's Golden Chaff	15	24	8½	10	18	75½
Richard Birch, Anderson	Dawson's Golden Chaff	16½	20	8	10	20½	75
Thos. Hanson, Motherwell	Abundance	14	20	7	9	15½	65½
WATERLOO.							
S. WATERLOO AGR. SOCIETY. *Judge—W. S. Fraser, Bradford.*							
Jno. Gillespie, Galt	Dawson's Golden Chaff	20	24½	8	18	23	93½
Jno. Jamieson, Hespeler	Golden Jewel	14¼	24	8½	19	22¾	92½
Jno. McBean, Galt	Dawson's Golden Chaff	18½	23	9	18	22½	91
Geo. R. Barrie do	.....	18	24	7	18	22	89
Jno. Orr do	.....	16	23½	8	18	23	88½
I. Hilborn, Roseville	Dawson's Golden Chaff	17½	23½	8	17	22	88
James Scott, Galt	.....	17	21½	9	18	22	87½
R. E. Cowan do	Dawson's Golden Chaff	16	24	8	16	21	85
P. H. Patterson do	Jewel	15	23	9	18	20	85
Wm. Slater do	Golden Jewel	16½	21	7	16	22	82½
R. S. Oliver, Branchton	.....	17	22	7	13	22	81
Abraham Ruddel, Hespeler	Ruddy	13	24	9	15	19	80
A. Fried, Roseville	.....	14¾	18	8	16¼	18	75

* General appearance—Considering stand of crop, type of plant, vigour and uniformity of growth, method of seeding, and absence of lodging.

† Yield and quality of grain—Considering proportion of well-filled heads of plump grain of good quality and uniformity of maturity.

NOTE.—The figures in parenthesis at the top of the table are the maximum scores.

RESULTS OF COMPETITIONS IN STANDING FIELD CROPS.—*Con.*

WHEAT.

Competitors in Order of Merit.	Name of variety.	General appearance.*	Freedom from weeds.	Freedom from smut, rust, blight and insects.	Freedom from other varieties and other kinds of grain.	Yield and quality of grain.†	Totals of scores.
YORK.		(20)	(25)	(10)	(20)	(25)	(100)
MARKHAM AGR. SOCIETY.							
Judge—Jno Campbell, Woodville							
Jas. A. Rennie, Milliken	Goose	18½	24	8	19	20	89½
G. B. Little, Brown's Corners	do	18½	24	9	16	21	88½
Wm. Armstrong, Locust Hill		18	23	8	14	23	86
P. W. Boynton, Dollar	Goose	14	23	8	19	19	83
Robt. Ormerod, Brown's Corners	do	15	24	8	18	17	82
Jas. Maxwell, Locust Hill	do	19	10	9	14	23	75
J. B. Johnson, Stouffville	do	17	12½	9	15	20	73½
Wm. Green, Ellesmere	do	16½	11	7	16	22	72½
W. P. Johnson, Stouffville	do	16	10	9	15	18	68
Thos. Maxwell, Highland Creek	do	12	20	6	14	16	68
E. Milne & Son, Green River	do	15	9	8	14	18	64
Walter Hood, Amber	do	18	.....	8	14	23	63
A. Pherill, Locust Hill	do	15	10	7	13	18	63
F. A. Reesor do	do	15	9	7	14	17½	62½
Jas. Lawrie, Mongolia	do	12	12½	7	18	13	62½
E. W. Robinson, Markham	do	15	8	8	13	18	62
Lt.-Col. J. W. Selby do	do	14	9	7	14	18	62
G. C. Morrison, Mount Joy	do	12½	15	6	15	12½	61
H. Lillie, Markham	do	13	13	7	14	13½	60½
A. E. Major, Whitevale	do	13	9	6	15	17	60
Jno. Cowperthwaite, Hagerman's Corners	do	15	10	7½	10	17	59½
David Reesor, Cedar Grove	do	14	8	6	13	18	59
J. Tran, Mongolia	do	13	10	7	13	16	59
W. B. Foster, Markham	do	16	8	8	10	17	59
Thos. White, Whitevale	do	13	.....	8	14	13	48

*General appearance—Considering stand of crop, type of plant, vigor and uniformity of growth, method of seeding, and absence of lodging.

†Yield and quality of grain—Considering proportion of well-filled heads of plump grain of good quality, and uniformity of maturity.

NOTE.—The figures in parenthesis at the top of the table are the maximum scores.

RESULTS OF COMPETITIONS IN STANDING FIELD CROPS.—*Con.*

PEAS.

Competitors in Order of Merit.	Name of variety.	General appearance.*	Freedom from weeds.	Freedom from disease and insects, as mildew, blight, weevil, worms, etc.	Purity of variety.	Yield and quality of grain.†	Totals of scores.
HURON		(20)	(15)	(20)	(15)	0	(100)
EAST HURON AGR. SOCIETY.							
Judge—Henry Davis, Ivy.							
Geo. McDonald, Wroxeter	Irvine	18	14	19	14	25	90
And. Stevenson, Atwood	Golden Vine	19	12½	18	13	27	89½
Oliver Turnbull, Walton	June	17½	14	18	14	24¾	88¼
Frank Collins, Trowbridge	Mummy	16	10	17	12	27¾	82¾
And. McKee, Ethel	Multiplier	15½	13	16	12	23¾	80¼
Geo. Robb, Brussels	White Wonder	15	14½	13	13	23¾	79¼
David Milne, Ethel	June	16¼	7	18	13	24	78¼
Robt. L. MacDonald, Cranbrook	Golden Vine	16½	12	19	7	21	75½
Wm. Hemmingway, Brussels	.....	16	10	16	13	20	75
Wm. Armstrong do	.....	14	10	15	12	21½	72½
Jas. W. Edgar, Gorrie	.....	15	11	12	7	25	70
Thos. Miller, Brussels	.....	15½	12	12	7½	23	70
Jas. Speers do	Golden Vine	13	13	10	10	24	70
Jno. McTaggart, Moncreiff	do	13	10	16	10	20	69
Thos. Bennett, Wroxeter	Grey peas	10	10	16	14	18	68
Walter Broadfoot, Brussels	White Wonder	14	13	11	7	23	68
Wm. Thuell do	do	13	11	14	10	17½	65½
Oliver Hemmingway do	.....	14	7	16	10	17¼	64¼
Robt. Nicholl do	White Wonder	13	12	10	7	21	63

*General appearance.—Considering stand of crop, type of crop, vigor and uniformity of growth, and method of seeding.

†Yield and quality of grain—Considering number and size of pods per plant, number of seeds per pod, uniformity of maturity and proportion of grain to straw.

NOTE.—The figures in parenthesis at the top of the table are the maximum scores.

RESULTS OF COMPETITIONS IN STANDING FIELD CROPS.—*Con.*

BEANS.

Competitors in Order of Merit.	Variety.	General appearance.*	Freedom from disease and insects.	Method and thoroughness of cultivation.	Purity of variety.	Apparent yield and quality of grain.†	Totals of scores.
KENT		(20)	(10)	(20)	(15)	(35)	(100)
ORFORD AGR. SOCIETY.							
Judge—Adam Hood, Milliken.							
W. C. Sifton, Palmyra	Pea Bean	19	9	18	14½	33	93½
Wm. Shipp do	do	19	8	19	15	32	93
Jno. Wade do	do	19	9	19	14	31½	92½
F. W. Scott, Highgate	Yellow Eye	18	9	18½	15	31½	92
Ernest Gosnell do	do	18	9	18	15	31½	91½
Sam. McAllister, Palmyra	Pea Bean	19	8	18	14	32	91
Geo. B. Newman, Highgate	do	19	8	19	13	31½	90½
Wm. Blue, Palmyra	do	19	9	18	14	30	90
Fred. McLaren, Highgate	do	18	8	18	14	31½	89½
Wm. Spears do	do	18	8	18	14	31	89
A. J. Newman do	do	18	8½	16½	14	30	87
Angus Walker, Duart	Pea Bean	18	8	17½	14	29	86½
J. L. McLaren, Highgate	Boston Pea	17	8	17	14½	30	86½
A. Thompson, Duart	do	17½	9	19	14	27	86½
Sam. Gosnell, Highgate	Yellow Eye	18	8	16	14½	29½	86
Wm. T. Street, Palmyra	Pea Bean	16	9	19	18	29	86
Jonas Gosnell & Sons, Highgate	Boston Pea	16	8	17	14	30	85
John G. Wilson & Son do	Pea Bean	17	8	15	14	29	83
Wm. Attridge do	do	16	8	15	14	29	82
Jno. Clark do	do	16	8	18	13	27	82

*General appearance,—Considering method of planting, uniformity of stand, vigour of growth and evenness of crop.

†Apparent yield and quality of grain,—Considering number and size of pods per plant, number of beans per pod, uniformity of maturity, and marketable quality, including size, smoothness and color.

NOTE.—The figures in parenthesis at the top of the table are the maximum scores.

RESULTS OF COMPETITIONS IN STANDING FIELD CROPS.—*Con.*

CORN.

Competitors in Order of Merit.	Name of variety.	General appearance.*	Freedom from smut and disease.	Thoroughness of cultivation.	Purity of variety.	Yield of fodder and grain.†	Totals of scores.
ESSEX.		(20)	(5)	(20)	(15)	(40)	(100)
ESSEX CO. AGR. SOCIETY. *Judge—L. H. Newman, Ottawa.*							
J. A. Hicks, Essex	White Cap, Yellow Dent	18¼	4¾	20	14½	36½	93½
E. Barrett, Gesto	King of the West	17½	4½	19½	14	36½	92
And. Chapman, Elford	White Cap, Yellow Dent	18	3¾	20	14	35¼	91
Jas. Peirce, Essex	Bailey	18½	4	20	14½	33½	90½
R. Shuell, Essex	Yellow Dent	17½	4	20	13	35½	90
Robt. Greenaway, Maidstone	White Cap, Yellow Dent	17½	4	20	14	33½	89
G. Church & Sons, Essex	White Cap, Yellow Dent	17¼	4	19	13¼	35½	89
E. E. Wismer do	White Cap, Yellow Dent	17½	4	20	13	34	88½
A. E. Wismer do	White Cap, Yellow Dent	16	4	19½	13	34½	87
Roy Ellis do	White Cap, Yellow Dent	16	4	20	13	32½	85½
T. Phillips do	White Cap, Yellow Dent	17¼	4	20	10	34	85¼
S. Wolf, Albuna	White Cap, Yellow Dent	16	4	18	11	33¾	82¾
Wm. Bughler, Essex	Early Ohio	15¾	4¼	18	13½	31¼	82¾
R. T. Pettypiece, Cottam	White Cap, Yellow Dent	15¼	4	19	10	32	80¼
Omer Moore do	Yellow Dent	15¼	4½	19	11	29½	79¼
T. H. Adams, Edgars	White Cap, Yellow Dent	13½	4	19½	13	28	78
John Sharman, Essex	Yellow Dent	15½	4	17	11	29½	77
Wm. Boggs do	White Cap, Yellow Dent	14	4	15	8	25	66
S. WOODSLEE AGR. SOCIETY. *Judge—L. H. Newman, Ottawa.*							
Matthew Henry, Woodslee	Yellow Dent	17½	4	18	14	37	90½
Harry Hayes, South Woodslee	do	17½	4	20	14	34	89½
Jno. Byrne, Byrnedale	White Cap, Yellow Dent	17	4½	20	13⅓	33½	88½
O. J. Wilcox, Woodslee	Yellow Dent	17	4	20	12½	34	87½
Jas. Headrick, S. Woodslee	Reid's Yellow Dent	17½	4½	20	10	34	86
A. R. Fenner, Ruscomb	White Cap, Yellow Dent	17	4	19	11	34	85
P. Murphy, S. Woodslee	Yellow Dent	16	3½	19	12	34	84½

*General appearance,—Considering uniformity and stand of crop, type of plant, and vigour of growth, and method of planting.

†Yield of fodder,—Considering quality and quantity of fodder, type as regards size, shape and yield of cars, and uniformity of ear, size and depths of kernels, variety considered.

NOTE.—The figures in parenthesis at the top of the table are the maximum scores.

RESULTS OF COMPETITIONS IN STANDING FIELD CROPS.—*Con.*

CORN.

Competitors in Order of Merit.	Name of variety.	General appearance.*	Freedom from smut and disease.	Thoroughness of cultivation.	Purity of variety.	Yield of fodder and grain.†	Totals of scores.
ESSEX.—*Continued.*		(20)	(5)	(20)	(15)	(40)	(100)
S. Woodslee Agr. Society.—*Continued.*							
B. Cohoe, Woodslee	White Cap, Yellow Dent	16	4	19	13½	30½	83
M. N. Mosseau do	Yellow Dent	18	4	16	13	31½	82½
Jno. Mullins do	Yellow Dent	15	3½	18	11	32½	80
Wm. Taylor, S. Woodslee	Yellow Dent	16¾	4½	19½	10	29	79¾
M. Byrne, Byrnedale	White Cap, Yellow Dent	16	4	17	12	30½	79½
A. Byrne do	White Cap, Yellow Dent	15½	4½	17	11	31	79
Jos. Dube, Belle River	White Cap, Yellow Dent	16	4	17½	11	30	78½
T. Plant, Woodslee	White Cap, Yellow Dent	16	4½	20	13	24	77½
W. W. Hill, Ruscomb	White Cap, Yellow Dent	15	4	17½	7	26½	70
Benjamin Brown, Comber	White Cap, Yellow Dent	12½	4	19	13	21	69½
D. Montgomery, S. Woodslee	Yellow Dent	12	4	15	11	25½	67½
KENT.							
Harwich Agr. Society. *Judge—L. H. Newman, Ottawa.*							
Robt. McGuigan, Cedar Springs	White Cap, Yellow Dent	18	3½	20	14	34	89½
J. B. McPherson, Blenheim	White Cap, Yellow Dent	18½	4	20	11	35¼	89
Jas. McPherson, Cedar Springs	White Cap, Yellow Dent	17¾	4½	19¼	11	33½	86
Thos. C. Warwick, Blenheim	North Dakota	17	4	18½	10	32½	82
A. E. Tole do	White Flint	14	3	18	14	31½	80½
Peter McGuigan do	Flint (red blaze type)	16	2½	18½	10	30	77
Sam. Burk do	White Cap, Yellow Dent	13½	4	16½	13½	29	76½
Raleigh & Tilbury Agr. Society. *Judge—L. H. Newman, Ottawa.*							
F. H. Middleton, Buxton	White Cap, Yellow Dent	17½	3½	20	13½	33	87½
Wm. Steacy, Sandison	Early Leeming	18¾	3	20	11	34¼	87
T. L. Pardo, Cedar Springs	do	18¼	2½	19½	11	35	86¼
G. L. Pardo do	do	17½	2½	19½	11	33½	84

*General appearance,—Considering uniformity and stand of crop, type of plant, and vigour of growth, and method of planting.

†Yield of fodder,—Considering quality and quantity of fodder, type as regards size, shape and yield of ears, and uniformity of ear, size and depths of kernels, variety considered.

NOTE.—The figures in parenthesis at the top of the table are the maximum scores.

RESULTS OF COMPETITIONS IN STANDING FIELD CROPS.—*Con.*

CORN.

Competitors in Order of Merit.	Name of variety.	General appearance.*	Freedom from smut and disease.	Thoroughness of cultivation.	Purity of variety.	Yield of fodder and grain.†	Totals of scores.
		(20)	(5)	(20)	(15)	(40)	(100)
KENT.—*Continued.*							
RALEIGH & TILBURY AGR. SOCIETY.—*Continued.*							
Judson Shepley, Dealtown	Yellow Dent (Leaming Type)	16	3½	19	12	32	82½
J. A. Fletcher, Valetta	North Dakota (White Flint)	16½	4	19	11	30½	81
W. J. Way, Merlin	Yellow Dent	16	4	18	12	30	80
W. C. McGregor, Tilbury E	North Dakota	15½	4	20	12	27	78½
J. J. Irwin, Stewart	White Dent	14½	4	18	10	31	77½
J. W. Smith, Stewart	Bailey	16	4	20	9	29	77
R. H. Jones, Marlin	White Cap, Yellow Dent	15	4	19	8	29½	75½
Wm. Pratt, S. Buxton	Twelve Rowed Yellow	14	3	19	11½	28	75½
Alex. Houston, Merlin	White Cap, Yellow Dent	12	3	18	12	29	74
J. H. Williams, Fletcher	North Dakota	13	4	16	14	26½	73½
W. KENT AGR. SOCIETY.							
Judge—L. H. Newman, Ottawa.							
Frank Suitor, Chatham	Leaming	18½	4	20	14	39	92½
Alex. Dick, Harwich	Yellow Dent	17½	4	19	13	38½	92
Arthur Parrish, Baldoon	Harper Yellow	17½	4	19½	12	38	91
Wm. Newkirk, Chatham	Huron Dent	17	4½	20	13½	34	89
J. B. Rhodes do	Compton's Early	16½	4½	18	15	34	88
W. H. Winter, Dover Centre	Early Huron	16½	3½	19	13	34½	86½
R. R. Huff, Chatham	White Dent	16½	4	20	12	33½	86
Wm. A. Stewart do	White Cap	15½	4	19	12½	35	86
Chas. Parker do	Yellow Dent	16½	3½	20	12	33	85
Henry Jewell, Northwood	Leaming	15½	4	18	13	34½	85
H. A. F. Parker, Chatham	Yellow Dent	17	3½	20	12	32	84½
J. R. Longmore do	Bailey	17½	4	15	13	34½	84
Jno. Bagnall do	White Dent	17½	4	15½	10	33	80

*General appearance,—Considering uniformity and stand of crop, type of plant, and vigour of growth, and method of planting.

†Yield of fodder,—Considering quality and quantity of fodder, type as regards size, shape and yield of ears, and uniformity of ear, size and depths of kernels, variety considered.

NOTE.—The figures in parenthesis at the top of the table are the maximum scores.

RESULTS OF COMPETITIONS IN STANDING FIELD CROPS.—*Con.*

POTATOES.

Competitors in Order of Merit.	Name of variety.	General appearance.*	Freedom from blight, scab and insects.	Method and thoroughness of cultivation.	Purity of variety.	Apparent yield.†	Totals of scores.
ALGOMA.		(15)	(20)	(20)	(10)	(35)	(100)
OLIVER AGR. SOCIETY.							
Judge—G H. Farmer, Steelton.							
Alex. Reid, Murillo	Early Galt	14	17	17	8	28½	84½
Robt. McKenzie do	World's Fair	13	18	19	6	27½	83½
Thos. Hughes do	Admiral Dewey	13	16	16	8	29	82
Jno. Baxendale do	Pingree	14	15	18	9	25½	81½
R. B. Martyn do	Carman	12	16	18	6	28	80
C. Garton do	Valkans	12	16	15	8	28	79
Alb. Shergold do	Admiral Dewey	11	19	15	10	23½	78½
Jas. Stevenson do	do	12	15	16	5	29	77
Frank Merrick, Miller	Carman No. 2	9	18	15	6	25½	73½
BRUCE.							
WIARTON AGR. SOCIETY.							
Judge—John McKee. Duntroon.							
W. W. Sims, Oxenden	White Elephant	13½	20	19	10	31	93½
W. J. Root, Wiarton	do	14½	18	20	10	29	91½
G. H. Stacey do	Mixed	15	19	20	6	31	91
H. F. Loney, Oxenden	do	15	19	20	5	31	90
F. Fletcher Buckland, Wiarton	Am. Wonder	13	16	20	10	29½	88½
T. H. Rothwell, Wiarton	White Elephant	12	20	20	6	27	85
Wm. McDonald do	do	12	16	20	8	28	84
G. H. Loney, Oxenden	Empire State	13½	20	18	8	24	83½
R. H. Humphries, Wiarton	Mixed	12	16	20	5	29	82
Westly Ward, Colpoy's Bay	Empire State	14	10	18	8	28	78
Wm. Green, Wiarton	Mixed	9	16	14	5	23	67
NORFOLK.							
HOUGHTON AGR. SOCIETY.							
Judge—H. S. Peart, Jordan Harbour.							
John A. Lucas, Fairground	Vermont Seedling	13½	19	18½	9½	30¾	91¼
Jas. Alderson, Clear Creek	Beauty of Hebron	13½	19	19¼	9¾	29	90¾
G. A. Garnham, Guysborough	Carman	13½	19	18	9¼	28	88
And. Hazen, Fairground	Vermont Seedling	14	17½	19	9½	27½	87½
Geo. A. Slaght, Glen Meyer	Carman	12	18	19	9½	28	86½
Watson Park. Fairground	Empire State	13½	16	16	9	30	84½
Thos. C. Thompson, Houghton	Planet	12½	17	17	9½	26	82
Jno. Park, Fairground		11½	16	19	9	25	80½
Wm. Balton, Houghton	Early White Prize	13¼	15	19	8	24	79¼
Jas. Boyd, Glen Meyer	Rose	9	18	15	8	29	79
Wm. J. Crawford, Houghton	Beauty of Hebron	11½	15	16	7	25	74½
Chester Silverthorne, Glen Meyer	E. Rose	9	18	15	8	22	72
M. S. Williams, Fairground		6½	10	15	8	25	64½
Arburn Mercer, Hemlock	Carman	8½	10	10	9½	24	62

*General appearance,—Considering method of planting, stand of crop, and vigour of growth

†Apparent yield,—Considering weight of marketable potatoes per square yard, quality, smoothness and uniformity of shape, state and uniformity of maturity and freedom from sunburn.

NOTE.—The figures in parenthesis at the top of the table are the maximum scores.

RESULTS OF COMPETITIONS IN STANDING FIELD CROPS.—*Con.*

POTATOES.

Competitors in Order of Merit.	Name of variety.	General appearance.*	Freedom from blight, scab and insects.	Method and thoroughness of cultivation.	Purity of variety.	Apparent yield.†	Totals of scores.
PARRY SOUND.		(15)	(20)	(20)	(10)	(35)	(100)
ARMOUR, RYERSON & BURK'S FALLS AGR. SOCIETY. *Judge—Simpson Rennie, Toronto*							
H. R. Hayward, Emsdale.....	Am. Wonder	14½	20	19	10	31	94½
Fletcher Walker, Royston.....	Late Puritan	15	18	19	10	27	89
Wm. Jenkin, Emsdale.....	Am. Wonder	14	14	18	10	29	85
Jas. Thompson, Burk's Falls....	Wonderful	12	18	15	10	23	78
W. J. Tilson do	do	11	16	19	10	19	75
Jno. T. Smith, Sterling Falls....	do	11	15	17	10	21	74
Geo. Louth, Burk's Falls.....	White Prize, Wonderful.....	10	19	15	5	24	73
Walter Sylvestre do	Lightning Express	10	15	19	4	22	70
Wm. Whittington, Pevensey	....	11	16	15	7	20	69
Wm. Lear, Burk's Falls.....	Beauty of Hebron	9	18	18	3	20	68
Peter Sollman do	Empire State	8½	16	13	10	17	64½
Alex. Kennedy, Sterling Falls..	Uncle Sam Natural Cross	8½	15	12	4	21	60½
Charles Inch, Burk's Falls.....	.....	7	16	16	4	15	58
Robt. Bradley do	Empire State	7	18	12	4	14	55
Rich. Goulding do	Sunlight	8½	15	10	5	15	53½
STRONG AGR. SOCIETY. *Judge—Simpson Rennie, Toronto*							
Arthur M. Church, Sundridge..	Beauty of Hebron	14	20	18	5	33	90
W. J. Hannaford do ..	Empire State	13½	18	18	9	28	86½
Jno. Paget do ..	....	13	19	18	5	27¾	82¾
Geo. Vanmer do ..	Green Mountain..	13	16	18	4	31½	82½
Thomas Walden do ..	National	11	17	15	10	24	77
Thos. Willoughby do ..	Green Mountain..	8½	17	16	10	23	74½
John Willoughby do ..	Delaware	9½	15	19	9	21	73½
Peter Lamb do ..	Empire State	12	19	16	4	19	70
David Gibbin do ..	Uncle Sam	10	17	15	3	18	63
Jno. Milne do ..	Green Mountain..	7	14	19	10	10½	60½
J. L. Anderson do ..	....	9	16	10	5	20	60
Dan. Sinclair do ..	Carman No. 3, & Early King	7	16	10	3	13¼	49¼
Ernest McCabe do ..	Beauty of Hebron	8	10	8	4	15	45

*General appearance,—Considering method of planting, stand of crop, and vigour of growth

†Apparent yield,—Considering weight of marketable potatoes per square yard, quality smoothness and uniformity of shape, state and uniformity of maturity and freedom from sunburn;

NOTE.—The figures in parenthesis at the top of the table are the maximum scores.

GRAIN FROM STANDING FIELD CROP COMPETITIONS.

Prize Winners at Guelph Winter Fair, 1909.

Prize Won.	Competitor and Address.	Variety.
Oats.		
1st	Foster Bros., Clarksburg	Banner Oats.
2nd	Wm. Beaton, Freelton	White Jewel.
3rd	Wm. Loveless, Ellesmere	Lincoln.
4th	Thos. McMurchy, Loree	New Sensation.
5th	John McDiarmid, Lucknow	White Danish.
6th	D. A. McNaughton, Morriston	
7th	J. A. Cockburn, Aberfoyle	
8th	Jas. McLean, Richmond Hill	Prince Royal.
9th	W. H. Clubine, Thornhill	Early Bohemian.
10th	W. H. Matthews, Clarksburg	Banner.
Highly Commended.	Alex. McCowan, Ravenna	Banner.
Wheat.	**Fall Variety.**	
1st	Wilbert Sparling, Anderson	Dawson's Golden Chaff
2nd	Jas. Scott, Galt	
3rd	Geo. R. Parrie, Galt	
Highly Commended.	John Jamieson, Hespeler	
Commended	John Gillespie, Galt	
Wheat.	**Spring.**	
1st	P. W. Boynton & Son, Dollar	Wild Goose.
2nd	Geo. B. Little, Brown's Corners	do
3rd	Jas. A. Rennie, Milliken	do
Barley.		
1st	C. W. Burrill, Onondaga	Mandscheuri.
2nd	R. J. Robertson, Cainsville	do
3rd	Chas. Edwards, Onondaga	do
Highly Commended.	W. H. Hird, Onondaga	
Corn.		
1st	Frank Suitor, Chatham	
2nd	A. E. Tole, Blenheim	White Flint.
3rd	Thos. Warwick, Blenheim	North Dakota.
Highly Commended.	T. L. Pardo, Cedar Springs	
Commended	J. A. Hicks, Essex	
Peas.		
1st	Geo. McDonald, Wroxeter	Irvine.
2nd	A. Stephenson, Atwood	Golden Vine.
Beans.		
1st	W. C. Sifton, Palmyra	Pea Bean.
2nd	F. W. Scott, Highgate	Yellow Eye.
3rd	Wm. Shipp, Palmyra	Pea Bean.
Highly Commended.	Ernest Gosnell, Highgate	
Potatoes.		
1st	Fletcher Walker, Royston	
2nd	Wm. Jenkin, Emsdale	
3rd	G. H. Stacey, Wiarton	

GRAIN FROM STANDING FIELD CROP COMPETITIONS.—*Continued.*

PRIZE WINNERS AT OTTAWA WINTER FAIR, 1910.

Prize Won.	Competitor and Address.	Variety.
Oats.		
1st	Melville Trewin, Blackstock	Early Prolific.
2nd	T. Cossins, Whitby	Big Four.
3rd	John White, Beachburg	Banner.
4th	Peter Drummond, Keene.	Irish White.
5th	And. McKay, Woodville	Newmarket.
6th	W. J. Barber, Ameliasburg	Sensation.
7th	Wm. Lewis, Dunsford	Siberian.
8th	Jas. Leask, Taunton	Sensation.
9th	Garfield Kennedy, Bobcaygeon	Banner.
10th	Thos. Cosh, Bobcaygeon	Sheffield Standard.
Barley.		
1st	David Malcolm, Nestleton	

PRINCIPAL WEEDS FOUND IN THE FOLLOWING DISTRICTS.

Algoma.

Central Algoma.—Fleabane, mustard, chickweed, annual sow thistle, ox-eye daisy, lamb's quarters, sorrel.

Dryden.—Wild mustard, wild oats. (Not many weeds reported.)

Brant.

Onondaga.—Wild mustard, annual and perennial sow thistle, black medick, dock, Canada thistle, bindweed, ragweed, wild oats, wild peas, chess, false flax, mayweed.

Paris.—Canadian thistle.

Six Nations.—Canadian thistle, couch grass, ragweed, sweet clover, wild oats, mustard, mullein.

South Brant.—Mustard, curled dock. No wild oats or sow thistle.

Bruce.

Arran and Tara.—Mayweed, annual sow thistle, burdock, plantain, wild carrot, yarrow, thistle, buckhorn, ragweed, lamb's quarters, wild buckwheat, wormseed mustard, smartweed, wild oats, milkweed, wild chicory.

Carrick.—Lamb's quarters, annual sow thistle, ragweed, chickweed, foxtail, thistles, blue burr, wild oats.

Lucknow.—Canadian thistle, wild buckwheat.

Carleton.

Carleton County.—Blight and smut bad. Sow thistle bad. Wild peas.

Dufferin.

Dufferin Central.—Some rust, wild oats.

Durham.

Cartwright.—Curled dock, sow thistle, wild oats.

Elgin.

South Dorchester.—Thistles, ragweed, annual sow thistle, mustard, dock, milkweed, perennial sow thistle, smut and blight.

Frontenac.

Kingston Tp.—Mustard, couch grass, thistle, ragweed.

Glengarry.

Kenyon.—Wild tares, Canada thistle, annual and perennial sow thistle, blue vervain, ragweed, smartweed, foxtail, wild buckwheat, milkweed, dock, wormseed mustard, wild mustard, catchfly.

GREY.

Collingwood Tp.—Thistles, annual sow thistle, golden rod, wild peas, foxtail, wild oats, curled dock, lamb's quarters, buckwheat, mullein, burdock, couch, tick burr.

Keppel.—Wormseed mustard, dock, thistle, wild buckwheat, milkweed, lamb's quarters, golden rod, annual sow thistle, ragweed, wild oats, bladder campion, buckhorn.

South Grey.—Wild oats, sow thistle, bladder campion.

Walter's Falls.—Thistle, catchfly, lamb's quarters, sow thistle, wild buckwheat, cockle, tick burr, pigweed, wild oats.

HALDIMAND.

Caledonia.—Few Canadian thistles.

Walpole.—Ragweed, wild oats, Canadian thistle, sour dock, annual sow thistle.

HASTINGS.

Frankford.—Couch, dock, sow thistle, foxtail, Canadian thistle, wild chicory, wild oats.

Madoc.—Thistles.

HURON.

Howick.—Wild oats, thistles.

Kirkton.—Thistles, chess, wild buckwheat, couch grass, purple cockle, blue grass, catchfly, bindweed, dock, wormseed mustard.

KENT.

Wallaceburg.—Wild buckwheat, ragweed, lamb's quarters, thistles, sour dock, wild oats, sow thistle, milkweed.

LANARK.

Lanark Village and Bathurst.—Foxtail, annual and perennial sow thistle, couch, wild vetches, ragweed, wormseed mustard, bladder campion, thistles.

South Lanark.—Wormseed mustard, annual and perennial sow thistle, vetches, ox-eye daisy, couch, thistles, foxtail, false flax, chicory, milkweed, ragweed.

LINCOLN.

Clinton Township.—Ragweed, thistle, annual and perennial sow thistle, milkweed.

Peninsular Central.—Thistles, ragweed, couch.

MIDDLESEX.

North Middlesex.—Thistles, foxtail, wild oats, ragweed, dock.

MUSKOKA.

Gravenhurst.—Foxtail, daisy, cockle, thistles, Scotch thistle, wild buckwheat.

South Muskoka.—Lamb's quarters, mullein, thistles, foxtail, yarrow, tares, wild buckwheat, daisy.

Stephenson and Watt.—Bindweed, thistles, dock, mullein, ox-eye daisy, mustard, wild oats, burdock, golden rod, perennial and annual sow thistle, foxtail and wild lettuce.

NIPISSING DISTRICT.

Caldwell.—No weeds reported.

Warren.—Lamb's quarters, wild buckwheat, thistles, wild oats (few), tares, foxtail, golden rod, false flax, prickly lettuce, yarrow, wormseed mustard, fireweed.

NORFOLK.

No report on weeds.

NORTHUMBERLAND.

Wooler.—Sow thistle, mustard, wild peas, curled dock.

ONTARIO.

Beaverton.—Thistle, catchfly, wild buckwheat, wild tares, cockle, perennial and annual sow thistle, milkweed, wild peas, curled dock, wild oats, blue burr, foxtail, smartweed, smut and rust.

South Ontario.—Wild oats, wild buckwheat, couch, sow thistle, thistles, foxtail, mustard, wild tares.

OXFORD.

North Norwich.—Thistle, yarrow, milkweed, ragweed, annual sow thistle, wormseed mustard, dock.

West Zorra and Embro.—Thistles, smartweed, ragweed, shepherd's purse, annual sow thistle, bindweed, dock, couch, foxtail, wild oats, perennial sow thistle.

PARRY SOUND.

McMurrich.—Lamb's quarters, wild oats, wild buckwheat, annual sow thistle, thistle, ragweed.

Perry.—Some smut.

PERTH.

Elma.—Annual and perennial sow thistle, dock, thistle, wild oats, fireweed, lamb's quarters, ox-eye daisy, mustard, wormseed mustard, wild buckwheat.

South Perth.—Annual sow thistle, milkweed, wild oats, bindweed, thistles, lamb's quarters, pigweed, foxtail.

PETERBOROUGH.

Otonabee.—Wild buckwheat, thistle, milkweed, lamb's quarters, foxtail, wild oats, golden rod, perennial sow thistle, ragweed.

Peterboro Industrial.—Thistle, wild buckwheat, toad flax, stickseed, perennial sow thistle, wild oats, ragweed, lamb's quarters.

PRESCOTT.

Alfred.—Wild tares, thistle, perennial sow thistle, ragweed, ox-eye daisy, sunspurge, quack grass, milkweed, daisy, birdweed, horsetail.

PRINCE EDWARD.

Prince Edward.—Couch, thistles, lamb's quarters, mustard, sour dock.

RENFREW.

Cobden.—Annual sow thistle, vetches, thistle, wild oats, quack.

North Renfrew.—Quack, annual sow thistle, wild oats, thistles, vetches, cockle, pigeon grass.

Renfrew.—Thistles and small weeds.

SIMCOE.

East Simcoe.—Foxtail, thistles, dock.

Elmvale.—Sow thistles, thistles, tares, foxtail, wild oats, burdock, dock.

Tiny and Tay.—Tares, foxtail, wormseed mustard, wild oats, thistles, bladder campion.

VICTORIA.

Eldon.—Annual and perennial sow thistle, wild buckwheat, catchfly, thistle, foxtail, vetch, wild oats, smut, rust and blight.

Verulam.—Thistle, wild buckwheat, wild oats, cockle, foxtail, tares, milkweed, dock, sow thistles.

WATERLOO.

South Waterloo.—Chess, couch, thistles, dock, cockle.

WELLINGTON.

Centre Wellington.—Wild oats, annual and perennial sow thistle, thistles, wild vetches and twitch.

Mount Forest.—Wild vetches, wild oats, thistle, perennials.

Puslinch.—Thistle, sow thistle, wild oats, wild buckwheat.

WENTWORTH.

West Flamboro.—Curled dock, thistle, wormseed mustard, wild camomile, sow thistle, ragweed, milkweed, couch.

YORK.

Markham.—Foxtail, bindweed, wild buckwheat, wild oats, camomile, wild tares, sow thistle, bindweed, ragweed, couch. Many other weeds.

Richmond Hill.—Thistle, wild oats, lamb's quarters, ragweed, perennial sow thistle, wild buckwheat, foxtail, couch, milkweed.

Scarboro.—No report on weeds.

PERENNIAL SOW THISTLE.

This is the most obnoxious weed of any with which the farmer has to deal at the present time, and its rapid spread all over the country calls for immediate

and determined action if it is to be checked, otherwise it seems likely that some farms will be rendered quite useless for cultivation. United effort is necessary because one careless farmer can render unavailing the work of eradication conducted by all in his neighborhood. The work, too, cannot be completed in one season,

Perennial Sow Thistle (*Sonchus arvensis*).

however well done. A close watch has to be kept on this pest for some time to come. Weakening the roots and preventing their developing leaves is the secret of destroying the Perennial Sow Thistle. Some of the best methods to this end will be found in the introductory portion of this report. See pages 3 and 4.

Annual Sow Thistle.

This weed differs from the Perennial Sow Thistle in several respects besides the fact that it is an annual. It has fibrous roots, whereas the perennial has numerous large, vigorous rootstocks full of milky-white juice. It is also smaller and

Annual Sow Thistle (*Sonchus oleraceus*).

not as coarse as the other. The leaves, too, are deeply lobed with soft, short spines, while those of the perennial are six to twelve inches long, pointed and deeply cut. The flowers of the annual, also, are smaller. It can be eradicated by cultivating thoroughly after harvest and growing a hoed crop next year. In pastures where it is abundant, sheep, those valuable allies of the farmer in fighting and destroying weeds, will prevent these weeds seeding.

Wild Mustard.

While only an annual, this is one of the hardest weeds to eradicate on account of the great vitality of its seeds, which can lie in a dormant state in the ground

Mustard (*Brassica sinapistrum*).

for years, and yet, when brought to the surface, germinate immediately. It has fibrous roots and grows erect, with a rough stem, with stiff hairs scattered over the surface. The leaves are oblong and the lower ones have one large terminal

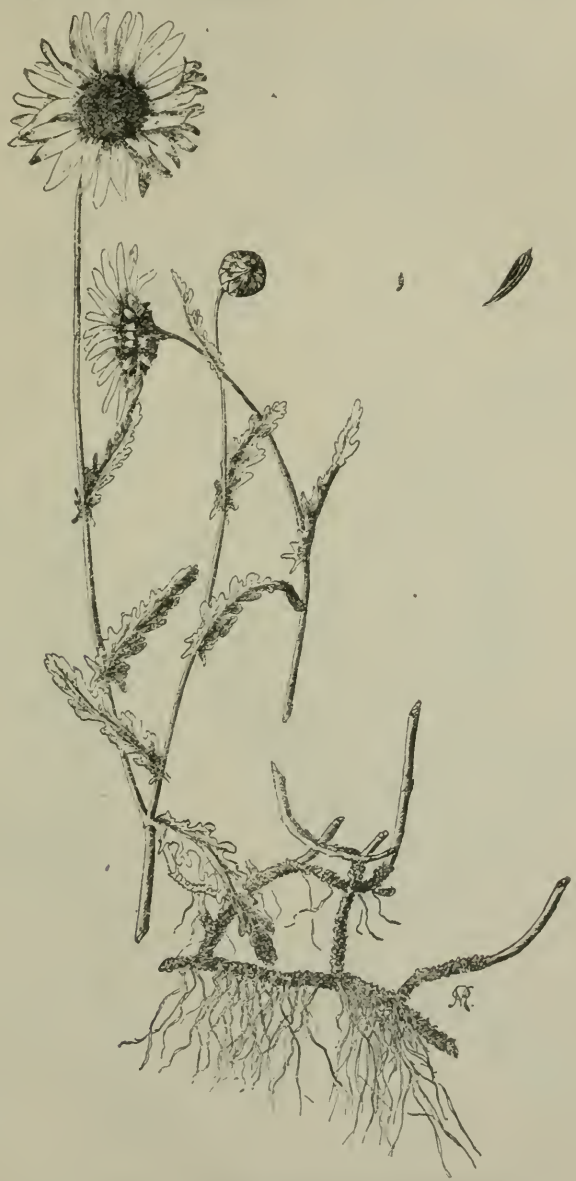
lobe and several smaller lateral ones. The flowers are yellow and about two-thirds of an inch broad. Pods appear on the lower part of the stem while the top is still in flower. The seed resembles that of rape and turnip. Handpulling is most effective for scattered plants, but, where they are numerous, gang-plough and harrow the stubble ground after harvest. When the seeds have sprouted, cultivate

Wormseed Mustard (*Erysimum chieranthoides*).

thoroughly at intervals and rib up with a double mould board plough just before frost. Sow a hoed crop in the spring and cultivate thoroughly during the season. Sow a grain crop next spring and seed to clover. If the mustard is not all killed, plough down clover after taking off a crop and repeat thorough cultivation.

Wormseed Mustard.

This is an annual, or winter annual, with erect and branching stems and is a native of this country. The leaves are long, tapering at the base into a short petiole and are covered with T-shaped hairs, and are easily distinguished from those of wild mustard. It is most prolific, an average plant producing 25,000 seeds which give a bitter taste when eaten. They can be eradicated by methods similar to those given above for wild mustard.

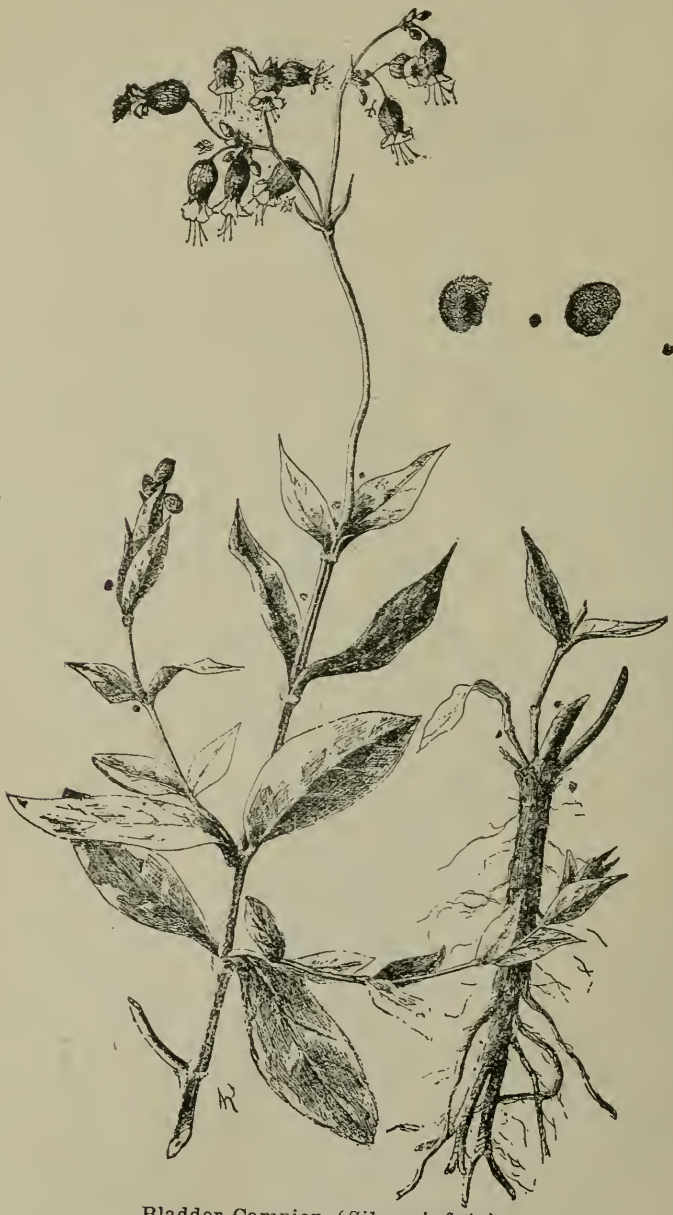


Oxeye Daisy (*Chrysanthemum leucanthemum*).

Ox-eye Daisy.

Another perennial with short, thick rootstocks, which have great vitality, is the Ox-eye Daisy, an importation from Europe. A large number of stems grow

from a single root, which vary in height from six inches to three feet. The leaves grow close to the stem, the lower ones being long and narrow and toothed along their edges, but the upper ones are small and without teeth. It is found growing most luxuriantly in old meadows and can only be destroyed by ploughing up the sod, then cultivating as for the destruction of Couch Grass. It is propagated chiefly by seeds in grass seeds and also by pieces of the rootstock.



Bladder Campion (*Silene inflata*).

BLADDER CAMPION.

This perennial, while not spreading over the country as fast as some others, is, nevertheless a bad weed, and should receive the farmer's attention. It branches

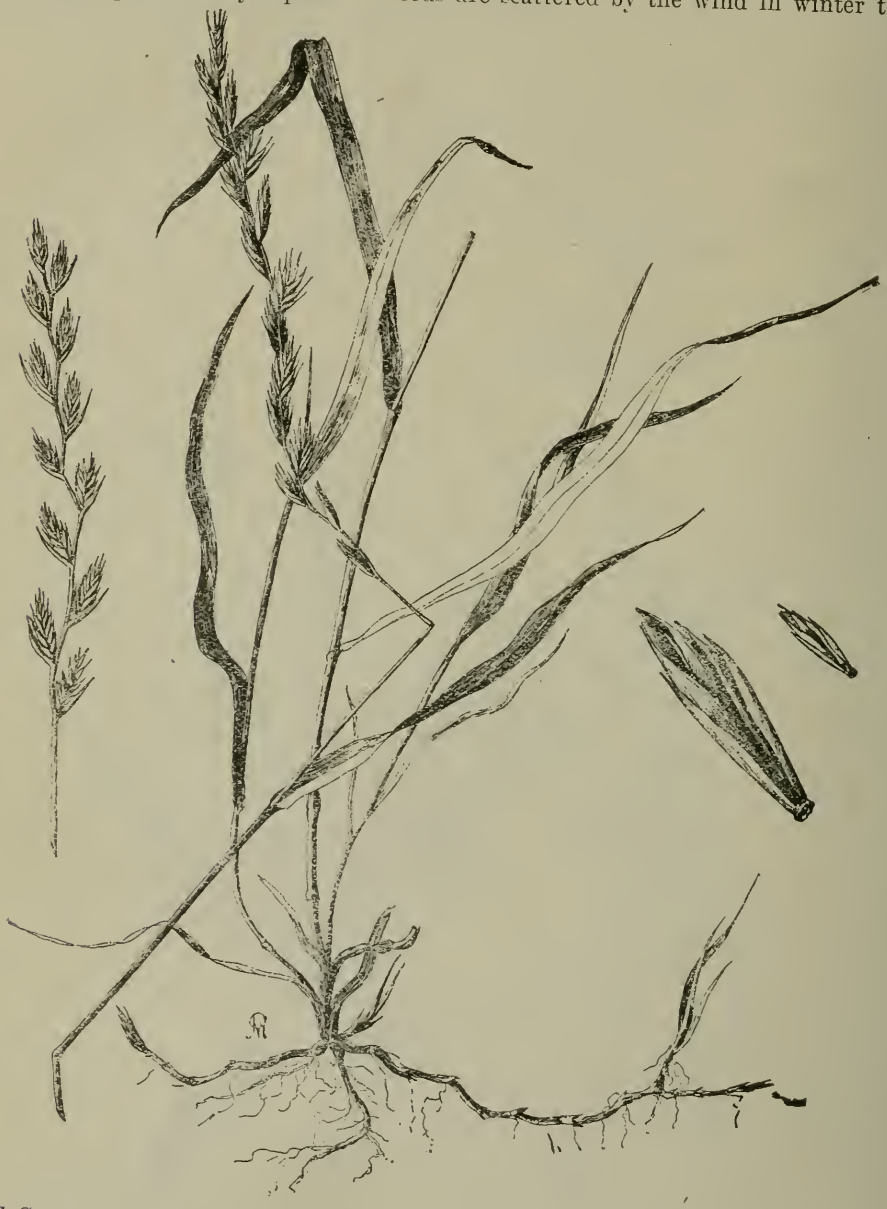
out just above the ground and grows from six inches to two feet high, with white flowers arranged in a loose panicle. The flower cup, which is veined and inflated like a bladder (whence the weed's name) serves to distinguish this plant from others like it, such as the Annual Night Flowering Catchfly, the seed of which is seen on the right of the illustration, that to the left being the Bladder Campion's. To destroy this weed use the same methods as employed for Canada Thistles and other creeping perennials. If the cultivator does not cut off the thick roots use the plough occasionally.

Blue Weed (*Echium Vulgare.*)

BLUEWEED.

This biennial was introduced from Europe and has a long tap root, which penetrates deeply into the ground. The first year there is merely a rosette of leaves

above the ground, but, during the second season, stems, bristly and hairy, grow to a height of, sometimes, two and a half feet. The leaves, which are oblong, vary from two to six inches in length, both upper and lower sides being hairy. Flowers are numerous and blue in colour, while the seeds are hard and brown, 3,500 being the average produced by a plant. Seeds are scattered by the wind in winter time



Couch-Grass on right of figure and part of a stalk of *perennial rye-grass* (*Lolium perenne*) on left.

over the snow. This weed flourishes best on lime and gravelly soils, and especially in fence corners and on roadsides. Cutting them off below the surface with a spud is the most effective way of destroying them in such places. In arable land they are easily killed by thorough cultivation.

Couch Grass.

This creeping perennial, which grows from one to three feet high, has secured a very strong foothold in many parts of the Province, and more especially on rented farms which are poorly tilled. Its jointed rootstock runs deeply into the soil, and has wonderful vitality. It is very hard to destroy it in a wet season. Plough lightly after the grain crop is cut, harrow, and use the spring tooth cultivator. This tears the roots up and they can then be gathered with the horse rake and burned as soon as dry. This process must be repeated as often as necessary. Just before frost rib up the land into drills, and in the spring plough about

Bindweed (*Convolvulus arvensis.*)

the last of May, cultivate thoroughly, and sow a hoed crop. Rape is especially good. Summer fallowing and growing buckwheat to be ploughed in are other methods of destroying this pest.

Bindweed.

In some parts of the Province Bindweed is very troublesome, as it twists its strong stems round the growing grain and other plants and partially chokes them and checks their growth. It is another of the perennials with a long creeping root, and a very small portion of this is sufficient to start new plants. Fortunately, it is not so productive of seeds as some others. A short rotation with late-sown hoed crops, like rape, is most effective. Before sowing the hoed crop, run a broad share cultivator frequently over the field so as to cut off the plants an inch or two below the surface, without dragging up any of the rootstocks. If any plants survive when the rape crop is fed or pastured off, follow next season with another hoed crop, such as corn, and cultivate thoroughly. Occasionally summer fallowing is necessary to destroy this weed.